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## ORIGINAL ARTICLES.

### THE RELATION OF PHYSICS TO PHYSIOLOGY.

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BEFORE there was any science men had theories and explanations of phenomena of all kinds. It was rare and sometimes hazardous for a man to say he did not know, but metaphysical antecedents were thought to be so good and oftentimes better than physical antecedents, and were generally more acceptable; but explanations of any kind require some sort of terminology, and that introduced at the outset oftentimes persists for a long time after its inappropriateness has been recognized. We say the sun rises and sets when we know it does not. We call presilurian rocks azoic, when we know some of them to be full of fossils. In physics we use the names caloric, latent heat, light, actinic rays, electric fluid, etc., each implying something which we know well enough has no existence, but among all such words there are none more widely used in both science and philosophy than the words *force* and *forces*. Science has the means at hand now of discovering the meaning of the term as used, but with the exception of a few in the van the old conception holds, and those who use them for philosophical purposes still assume them to have their old meaning, namely, agencies distinct from matter but capable of acting upon matter, moving it thus and thus and producing phenomena which matter through its own inherent properties could not produce. It is thus with gravitative force, chemical, electric, magnetic and vital force. More than twenty years ago Mach, Tait and others pointed out there was no such thing or action or condition, and that the word had better be abandoned; just as Prof. Newcomb pointed out a few years ago that there is no such thing as light, and that that word had better be abandoned, as it is manifestly improper to speak of the velocity of a something which has no existence.

When it was shown that heat was a mode of motion and had no existence apart from molecules and atoms, caloric and heat as forces active upon matter had no standing ground.

When it was shown that electrical phenomena have either heat, chemical or mechanical action as antecedents and that the relation was quantitative, then electric fluid and electric force, as something capable of acting upon matter, but independent of it, had no longer any reason for mention in physical science.

When it was shown that chemical action depends absolutely upon temperature, chemical force was banished from the list of forces, and for a like reason the physiologists banished vital force half a century ago. Forces of all sorts have thus been dethroned. There are no such things, and all the phenomena which were formerly supposed to be due to them are now seen to be due to the structure, mechanical properties and activities of atoms and molecules alone, and that no other activities than their own are operative among them or are needed by them.

If, therefore, one use the word force as descriptive of an agency for accomplishing any result in a mass of matter of whatever composition, one may conclude he is talking loosely, or else he uses the word to conceal his ignorance of the immediate physical antecedents of the phenomenon considered. He might as well have said it was brought about by *abracadabra*.

It is sometimes said that one fact incompatible with a given theory is sufficient to overthrow the theory. It may be true, but it is well to be sure of the fact. When the moons of Mars were first discovered, one of them was discovered to be revolving about the planet faster than the planet revolved upon its axis. This was hailed by some as being quite incompatible with the nebula theory, and was trumpeted by some who did not like that theory. A careful investigation into the mechanics of the case served to show that such a result was one of the contingencies of the nebula theory and so confirmed it. The objectors were silenced, but were not converted. A change in fundamental conceptions is as difficult in science as it is in religion or politics, and newly discovered truths of importance have to wait for a new generation without antagonistic preconceptions. If one must wait until every discrepant fact is explained before entertaining a theory which has a multitude of other facts in its favor, he will have no theory at all. Even the motions of the moon and the planet Mercury are not all accounted for in present astronomic science. The facts show some factor not yet reckoned with, and one is at liberty, if he wishes, to assume that some super-physical agency or force is active upon both, making them to move in anomalous ways. Astronomers do not do that, but are looking over the law of gravitation to see if it is accurately stated, and are figuring upon the effect of the assumption that the density of the sun's equatorial region is greater than the density of its polar regions. May it not be wise to do in like manner in every case? If an unexplained phenomenon is observed in any mass of matter, assume that some of the properties of matter have not been considered, rather than that some extra material forces are present and operative. Not until all is

known as to what matter can do will it be safe to say what it cannot do.

Then what can matter do, relying upon its own resources, so far as is generally acknowledged? There appears to be no objection anywhere to crediting all so-called inorganic phenomena, such as gravitation, heat, electricity, and chemical reactions, to the inherent properties of the various masses of matter that exhibit the phenomena. All these agencies are called physical or chemical, and only when one attempts to account for particular phenomena does any one begin to talk about forces. Gravity is only the hold that every atom has upon every other atom, and it never relinquishes it. It is now explained as due to ether pressure, which pushes atoms towards each other, and the expression gravitative attraction is becoming obsolescent. Heat is the vibratory motions of atoms and molecules, a rapid change of form due to their elasticity. Light, now called ether waves, is the reaction upon the ether of the vibratory motions of the atoms and molecules which produce wave motions in the ether. Chemical reactions are conditioned by the rates of atomic vibrations, and these in turn by the masses of the atoms, so in the absence of heat there can be no selective property, and therefore no molecular combinations. Electrical phenomena are due to atomic rotations, and the reaction of the rotations upon the ether sets up in it stresses and waves of precisely the same nature as so-called light waves. In each of these fields of phenomena there is to be ultimately traced only matter, the ether and their mutual relations and inter-actions. If anything happens it is because physical energy, as a bump, a vibration, a rotation, or a wave, is acting upon matter. Whether one thing or another happens depends upon the mass and the kind of matter. If there be any one statement which has the whole body of physical science in its favor it is this: That no particle of matter ever changes its character or mode of operation on account of its environment. The properties of the elements are invariable. The books have long taught us that it was indestructible, but they have not emphasized the proposition that one must not expect to get out of a hundred molecules what is not in any one of them, nor that the properties of any combinations of atoms, simple or complex, are the resultant properties of the elements which compose it.

What differences are there between carbon dioxide, protoplasm, and the elements which compose them?

The properties of atoms are not alike on different sides. They are ecotropic or polarized, and when any given atom is turned round in a given compound, the resultant is changed by the configuration, not because the particular atom has assumed a new property, yet the molecule exhibits a different quality and may have a different function, and this is to be assumed of every atom in every combination. The mechanical arrangement of atoms in a molecule may vary in many ways. The size of atoms is approximately the fifty-millionth of an inch. In a molecule of three

atoms like carbon dioxide they could be arranged longitudinally like coins or marbles, but there is no probability they are so arranged. If they were arranged in triangular section the combined dimensions of the three would differ but little from the dimensions of one in its greatest diameter, and however one should measure it, it would still be but about the fifty-millionth of an inch.

The molecule of protoplasm is made up of a great many atoms of carbon, hydrogen, oxygen, nitrogen and other elements. If there were a thousand, and they were arranged in a spherical form, the diameter of the mass would be not far from ten times the diameter of one atom, for the volumes of spheres are as the cube roots of their diameters, so its diameter would be the five millionth of an inch, fifty times too small to be even glimpsed with the highest microscopic power we have. The molecule of protoplasm is therefore nearly a thousand times larger than the molecule of carbon dioxide. As to the arrangement of the atoms, one cannot say with any definiteness now what it is in either, but there are some very obvious differences which one may know must be true, even if he cannot see them. By permutation we know that three numbers or things may be arranged in six different ways, four things in twenty-four ways, ten things in more than three million ways, and a thousand things more ways than can be numbered, and this is simple linear arrangement. If, in addition, there be difference of properties of the sides or faces of such atoms, then the possibilities of variety are enormously increased, practically to an infinite number, due simply to change of position of the elements giving some new characteristic to the whole so as to enable it to behave differently in its environment. In chemistry such different arrangements are called allotropic. Thus there are several such for the element carbon; diamond, graphite, lampblack, charcoal, coke, anthracite, all these are of the same ultimate element, but the properties, how different; diamond the hardest of crystals, lampblack the softest of bodies, one burning freely, the other wasting but slowly in the fierce heat of an electric furnace. The molecular arrangement in quartz is certainly of as many as three varieties, for though two crystals may look alike, one may twist ether waves to the right and the other to the left. Some crystals are so built up as to present six-sided prisms of regular symmetrical form, while others are formed of corkscrew pattern, showing a different but regular position for all the molecules that compose it. When the iodide of potassium crystallizes in the light it assumes a different form from that which crystallizes in the dark. Would not one who was acquainted with such physical facts expect to find in more complex molecules the same phenomenon of allotropy? What is allotropy? It is the assumption of different forms with different physical properties and reactions by a substance which, when analyzed, shows the same elements in the same proportion.

When there are as many atoms in a molecule

as there are in protoplasm or other highly complex molecules, some of the atoms must be upon its surface and others more or less deeply imbedded. Those upon the surface are acted upon directly by such agencies as heat, cold, radiation and the like, in a way quite impossible to the deeper seated atoms, and so atomic changes could happen in one of these places at a different rate from that in the other.

There is what is called surface tension, which means that the surface molecules of a liquid or any mobile body are in a state of stress different from those in the interior. It is pictured as being practically like a skin, is less easily displaced and offers greater resistance to ingress or egress or puncture than elsewhere.

Electrical phenomena have thrown a good deal of light upon the actual conditions of molecules of all sorts when in solution. Thus what is called electrolysis was a puzzle for a long time, for when a current of electricity is passed through a liquid, as water, for a simple case, the water is not only decomposed but the products appear at different places, the oxygen at the place where the current enters and the hydrogen where it leaves the liquid, and this quite independent of the distance between these two points. If a current were thus sent through the breadth of the Atlantic Ocean the oxygen would be set free on one continent and the hydrogen upon the other. Grotthus' hypothesis was that each molecule in the line between the extremities was decomposed by the current, and when combinations occurred each molecule was differently constituted than before; that is, each atom of oxygen combined with a different pair of hydrogen atoms. The difficulty with this hypothesis was it assumed a vast deal more energy expended to do the decomposing than was observed to be actually expended. Clausius, a German physicist, saw the way through this puzzle when he applied thermo-dynamic considerations to it. This is that at all temperatures the constituent atoms of all molecules are constantly vibrating and bumping against each other with greater or less impact many millions of times per second. It thus happens that some atoms must all the time be loosening their holds, and for a brief time be quite detached from the atoms they are combined with. This process of decomposition and recombination must be going on all the time in all liquids. If there be any directional activity that can give a free atom a heading towards one place rather than another, it will move such free atom so it would not combine with the same element it was with before, but with an adjoining one in a position to combine, so there would be a constant stream of atoms of one sort moving in one direction and a corresponding movement of the other element in the opposite, without the expenditure of external energy to any considerable extent.

Now, in a mass of protoplasm, which is largely liquid, the same temperature changes must be going on, and one would expect similar changes of constituents would be taking place, for the same reason. Within the substance where surface tension is not a controlling factor structural changes

must be going on, not necessarily all of different constituents, but of similar ones. At this instant this atom of hydrogen or oxygen is a real constituent part of the molecule, the next instant it may have bounded away from it so as actually to be detached, but it will return to its former place to remain for an interval. If one were to examine the molecule at the second instant it would appear to be somewhat differently constituted from what it was before. Some of the elements always found in protoplasm are much more easily displaced than others. For instance, nitrogen is a very unstable element in a molecule wherein it may chance to be. All the explosives contain it; gunpowder, nitro-glycerine, the fulminates, possess their vigor on account of the presence of nitrogen, ready on the first opportunity to part completely with its associates to become a wandering Bedouin, resisting captivity and association, and breaking camp upon the least provocation. It can be made to combine chemically only by compulsion. Other elements combine with it by expending some of their own energy upon it, energy which is at once restored when decomposition is effected.

Now if nitrogen is a constituent of what we call protoplasm, and if such activity as I have described be present all the time in it, is it a matter for surprise that changes of various sorts should be observed in it? If one were to inquire for the origin of the changes, would it not be quite sufficient to recount the physical agencies present in all such masses, and that the changes will stop when the element has eliminated itself? I say eliminated itself rather than has been eliminated, for the latter implies some other agency than its own, and there is no need for that. Again, the ability to do something resides in all the elements, without exception. We call it atomic energy. Evidence for it is abundant. Thus, a definite amount of hydrogen has a definite amount of energy. Combined with oxygen it forms water, but while combination is going on an immense amount of heat is developed. The gases might have the temperature of freezing water at the beginning, but enough heat will be generated by a pound of hydrogen to raise the temperature of a hundred pounds of water 620 degrees. Where did the energy this represents come from? There is but one answer to this. It comes from the atoms themselves, not from elsewhere; not only that, but the energy does not reside in the atoms as heat, for, according to the assumption we start with, the material is at the freezing point of water. Apparently it is not electric, nor gravitative, nor thermal; no matter now in what form the energy exists in such atoms, the point is that each atom has somehow a store of it. It has the ability to do something, and so far is not the inert stuff it has so often been assumed to be. In like manner carbon has an immense amount of energy stored in it when it appears as if it were inert and dead. A pound of coal, when allowed to combine with oxygen, transforms enough of this energy to raise the temperature of 100 pounds of water 140 degrees, the equivalent of 11,000,000 foot pounds, enough

if applied to itself to raise it 2,000 miles high. Is matter that possesses such a store of energy to be counted as inert and unable to do *anything* unless acted upon by some force?

During the civil war the disheartening head lines of the daily papers all too frequently read "All Quiet on the Potomac." A spectator upon the field might have seen individual activity enough, though the army as a whole did not change its position. There was as much energy in the army while it stood still as when it was on the march, or in the roar of battle. In like manner there is as much energy in a pound of coal when it is quiescent as when it is active in a steam engine. The activity is of a different kind, but none the less real.

When carbon combines in any partial way, that is, does not unload its energy so completely as it does when combining with oxygen in a flame, it still has the remaining energy for disposal. Thus it happens that in food stuffs containing carbon the reduction is not complete: hence food stuffs have a supply of energy made available when changing its carbon, hydrogen and oxygen to carbon dioxide and water, setting free as we say the energy of foods. Bread and butter are valuable for food, because they are stored with energy in an available form for nutrition. Our digestive apparatus is not fitted for abstracting the energy of coal in a direct way; the process has to be started. A pound of bread and butter has about 9,000,000 foot-pounds of energy, while a pound of carbon has 11,000,000. When the combustion has been complete in digestion and for bodily expenditures in one way or another the product is carbon dioxide, as in combustion, and there has been given up 9,000,000 foot-pounds for the bread and butter.

Protoplasm of all sorts, as it can be used for food, is a substance loaded with energy available for physiological uses in an organism. It differs from the final products of decomposition, the fully oxidized products, in the fact that it possesses a relatively large amount of energy, while carbon dioxide and water possess a minimum. In order that carbon dioxide and water should again be decomposed, energy has to be spent on them in some way. Thus, to get the hydrogen and oxygen in their original gaseous form 48,000,000 foot-pounds of work have to be spent. This may be effected by a current of electricity or by heat; anything that will separate the elements, but that amount of energy has to be returned to those elements, and 11,000,000 to the pound of carbon. One does not need to know in what form energy exists in the ultimate atoms in order to be certain it is there and in definite quantity. Energy is the ability to produce pressure or to move bodies. It exists in various forms; mechanical, as when a body large enough to be seen has visible motion; molecular, when the movement is of the molecules, too minute to be seen. We call some manifestations of it heat, some electrical, some physiological. Some of these molecular forms are fairly well made out, as that for heat, which we describe as vibratory, or electrical, which we describe as rotary, but for the

chemical energy of carbon or of foods we have only a glimpse, and that glimpse is indicative of electric character. It remains to be explained how a quiescent body of ordinary temperature can possess more energy per cubic inch than can be given to any mass of matter in a mechanical way, nevertheless, as it can be made to give it up at will, as is the case with gunpowder, and restored to it by reversing the process, there is nothing more mysterious about it than there is in most other physical phenomena.

So far one may say that the difference between carbon dioxide and protoplasm is not only one of complexity of composition of form and of internal structure, but of inherent energy in an easily transformable shape, where transformations are taking place continuously, but with rapidity which depends upon temperature and amount of moisture, the latter simply for facilitating the exchanges.

Thus it is that there is more energy in atoms than in any combination of them, and the looser the combination the more energy. The assumption has generally been made that the great difference between living things and dead ones is that the living ones have ability to store energy and grow, while inanimate and inorganic things only run down by decomposition; but if the free elements have more energy than they have in any combination, then living things do not store energy any more than non-living things, for the new structures built have less energy than the materials out of which they were built. All the so-called organs of animal structures are composed of these complex energized molecules, and all physiological functions are but the steps by which this energy is changed from its more concentrated form to more diffused forms, and there is nothing in the whole line of phenomena but a series of physical and chemical reactions. I use the word chemical here in its ordinary sense, but really chemistry is that department of physics which is concerned with the disposition of atomic energy in combinations, which, as I have already said, is absolutely determined by temperature and has no existence apart from it.

The factors, then, of physiological phenomena are the kinds of matter found in inorganic things and the kinds of motion and energy which give to the kinds of matter their characteristic properties. The phenomena exhibited with these factors depends upon the inherent qualities of the atoms themselves, and it is certain that the old notions concerning their nature and possibilities must be profoundly changed, for the old is altogether inadequate, and no one to-day knows enough to say what matter cannot do, for such a one makes ignorance do duty for knowledge. What can be strongly stated is that the variable factors are heat and electricity, for these determine chemical reactions in the body as well as out of it. For a long time heat was the only physical factor employed for chemical purposes in inorganic processes. Lately electricity has been utilized, and has made possible many reactions which were either impossible or required a long time to effect, such as the reduction of

alumina, the tanning of leather, the making of potassium chlorate and sodium carbonate. Is it not altogether probable that the selective chemistry of tissues of all kinds is to be helped in like manner by employing the same agent, and that only present lack of knowledge prevents its successful use in promoting normal physiological processes and destroying abnormal? Anthropologists are telling us there are few if any individuals of any race that are thoroughly sound; that all are in a more or less diseased condition. That means that cellular structure does not distribute to physiological structure the proper kind and amount of physical energy needed. The trouble is with the cells, not the organs. And the trouble with the cells is instability, due to lack of available energy, ultimately electrical, if there be any truth in what seems to be implied in all molecular structures, for every atom has its electro-chemical equivalent or electrical energy, which is disposed in this way or that, as it is held more or less stable in its molecule.

When science in all its departments is quite rid of the ghosts called forces, and both thinking and effort are directed to the real factors in phenomena advancement will be rapid.

In both science and the mechanic arts improvements go from the complicated to the simple. Mechanisms to produce certain results are at first sometimes ridiculously complex and change to ridiculously simple. Such was the case with Faber's talking machine compared with the phonograph, and there is every reason to believe that physiology is repeating the same inverse process, and is being reduced to few and simple factors.

#### THE TREATMENT OF DISEASES OF THE PELVIS BY OPERATING THROUGH THE VAGINA— VAGINO-PELVIC OPERATIONS.\*

BY HOMER I. OSTROM, M.D., NEW YORK.

THE extension of what may be designated as vagino-pelvic surgery beyond the removal of the uterus, belongs to the past few years. Surgeons have been, and are still, slow to recognize the advantages which this method possesses of entering the pelvis, and dealing with diseases in that region, and have until quite recently given their preference to the abdominal route for the treatment of damaged appendages, the products of inflammation, and all uterine tumors, save those of small size, or of a malignant nature, located in the cervix uteri.

I apprehend that this is chiefly owing to three causes: *First*—This region of the body was first made accessible through the abdominal opening, and surgeons devoted themselves to perfecting that method of operating. *Second*—Some of the conditions now reached through the vagina had

not attained the position of accurate diagnosis nor received a correct pathological interpretation, in the early days of abdominal surgery. *Third*—The limited field for manipulation afforded by the vaginal opening presented obstacles to the control of hemorrhage and to the ocular examination of the parts involved in the operation, that unnecessarily increased the risk to life without offering any compensating advantages.

With a better understanding of pelvic pathology, and the confidence that belongs to knowledge, the original lines of abdominal surgery have broadened until the vaginal route for operating now occupies a legitimate position among the methods of reaching pelvic diseases.

It is my present purpose to outline the class of cases in which the vaginal operation is the one of election.

Three anatomical facts appear when studying the pelvis in reference to vaginal operations. *First*—If the operation does not involve removal of the uterus or the appendages, in the majority of instances it can be made extra-peritoneal; that is, without opening the abdominal cavity. *Second*—The vagina is the anatomical drain for the pelvis. *Third*—Manipulations through the vagina can be conducted with a minimum degree of disturbance of the abdominal viscera.

With these considerations before us, the ideal boundary line for vagino-pelvic operations will rest upon mechanical possibilities; practically it will rest upon the individual manipulative skill of the operator. What one operator may consider entirely practicable, another will discard as out of the question, or as involving so much unnecessary time, and hence liability to shock, as to be unjustifiable.

In point of fact pelvic operations done through the vagina, do, on the whole, call for more manipulative skill than when done through an abdominal incision. The field of operation is mostly out of sight, and hence, the extent of the operation must be determined by the touch alone, and frequently adhesions separated and arteries ligated unaided by the eye. Again, beyond natural limits the field of operations cannot be enlarged, which offers an obstacle to the free use of fingers or instruments. The advantage, however, of this method of operating must ever stand before us as an incentive for increasing our manipulative skill, and perfecting our operative technique.

We do not need to discuss vaginal hysterectomy. The operation as such is a well recognized procedure, and using clamps or ligatures, sewing the peritoneum or leaving it open for drainage are matters of individual preference, the differences in technique, given equally skillful operators, not seeming to influence the results. But the limits of the operation fall distinctly within the present inquiry; that is to say, we have to determine how large a tumor of the uterus, and what pathological conditions, can be removed through the vagina.

It is evident that no precise limit as to size or weight can be given. In general, we may say that a tumor rising out of the pelvis is not a

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suitable one for the vaginal operation, but if the vagina is large and capacious, as in multipara, and the uterus can be dislocated by the process of *morcellement*, even larger tumors can be removed by this method, with the great advantages over the abdominal, that have already been mentioned.

In performing this, as well as other operations upon the uterus, it is well not to lose sight of the fact that hemorrhage is temporarily controlled by traction upon the uterus; therefore if the organ is constantly pulled down against the scissors or curette and never relaxed, danger of hemorrhage may be eliminated from the operation. I do not wish to assert that by traction upon the uterus a hysterectomy is made perfectly bloodless, and thereby the securing of arteries rendered unnecessary. By tension of the arterial trunks that supply the uterus, the flow of blood is arrested, and by the time the uterus and tumor are delivered, these arteries are brought in view, and can be dealt with according to the individual preference of the operator, but the traction controls hemorrhage during the operation.

Solid tumors necessitating hysterectomy, are removed with less difficulty than when the uterus is left in the pelvis, but even under such conditions it is perfectly possible to operate on tumors of considerable size. The manipulation will then be facilitated by accurately establishing the location of the neoplasm, whether it is anterior, posterior, or lateral to the uterus, for the incision for the operation should, in general, correspond as nearly possible to the shortest route through which it can be reached and extracted.

For an exploratory opening, I have found the vesico-uterine space to offer advantages which lead me to make this my point of election when I wish to enter the pelvis from below. The passage to the fundus, and laterally to the ovaries and tubes, is shorter than that offered through a posterior opening, where the examining finger must traverse the hollow of the sacrum before these parts can be reached, for while the ovaries lie behind the broad ligament when the body is prone, the finger, having gained the fundus, will have no difficulty in reaching the appendages, and with much more certainty be able to map them out, having the Fallopian tube for a guide, than when approached from behind.

Now as to the technique of removing solid tumors from the pelvis through the vagina when the uterus is not amputated, perfection has not yet been reached. The process of removing small portions at a time, already referred to, does not appeal strongly to the surgical sense. At the best it is a justifiable makeshift, no more, and will only satisfy us until something better is proposed. I have done the operation several times successfully, but under a mental protest, and have decided that where the tumor is of such size that by splitting in half it cannot be removed through the vagina, or of such a variety that it cannot be peeled out of its capsule, the operation thus becoming extra-peritoneal, it is better,

if the operation has been begun through the vagina, to finish it through the abdomen. The fact of the vaginal opening does not, I think, materially add to the risk of opening the abdomen, and in some respects facilitates the manipulation. For while I favor the vaginal operation, I am able to recognize that it, in common with other surgical procedures, has its limits, and that we are not justified in subjecting our patients to unnecessary risks in order to prove a theory, or give an exhibition of our manipulative skill.

While some tumors of the uterus are best operated on through the vagina, I apprehend that the chief adaptation of the vagino-pelvic operation will be found to be the treatment of that class of diseases more or less associated with pelvic inflammation, either of the ovaries, tubes, or peri-uterine tissues. Almost every collection of pus or fluid within the true pelvis is accessible through the vagina, and in many instances can be operated on without entering the peritoneal cavity.

We have only to consider the pathology of this form of disease to verify the statement. First: Purulent collections, whether these are in the ovaries, tubes, broad ligaments, or outside of the uterus, can with the aid of bimanual manipulation be brought within reach of the outlet of the pelvis, and further, the inflammation that preceded their development has usually been associated with sufficient peritonitis to induce adhesions between serous surfaces. When these adhesions take place below, they are in the region of the vault of the vagina, and the conditions are most favorable for an extra-peritoneal operation, and even when the adhesions are to the abdominal viscera, and the pus sac must be removed, the abdomen is, to a certain extent, protected from the invasion of any escaped fluid, and it, together with the field of operation, is left in the most favorable condition for drainage.

While mere collections of pus are intra-peritoneal, they but depend upon inflammatory adhesions to make them extra-abdominal at the time of operating. Quite different are collections of fluid between the layers of the broad ligaments and beneath the peritoneum, in the peri-uterine spaces. The peritoneum is then separated from the underlying tissue, and the fluid, obeying the laws of gravitation, falls naturally to the lowest part of the pelvis, and can readily be reached through the vagina. It is these cases that give such brilliant results when operated on from below, rather than above the pelvic bone.

In this class falls ectopic pregnancy, until recently attacked only through an abdominal incision.

The majority of extra-uterine pregnancies rupture in the early months, either from the free border of the Fallopian tube, or between the layers of the broad ligament. In the former case the hemorrhage from the first being free in the abdominal cavity, becomes, if left long enough, encysted, and shut off from the general cavity by inflammatory adhesion. These sacs usually

point in the posterior cul-de-sac, and if the hemorrhage is repeated contain a vast quantity of blood, clots, and broken down tissue. If the rupture occurs between the folds of the broad ligament, the base of the ligament is separated, and the vault of the vagina forms the inferior wall of the foetal sac.

The indications for operating are here plainly made out, and involve comparatively little risk. The main question turns upon the treatment of the placenta, whether the operation is performed before or after secondary rupture of the broad ligament sac has taken place.

My desire is always to leave a surgically clean operative wound, but if removal of the placenta involves an otherwise unnecessary opening of the peritoneal cavity, I prefer not to disturb the placenta, but to pack the sac and allow the tissue to slough away. I have operated in this manner, through the vagina, five times, and have in each instance had occasion to remark not only upon the rapidity with which the placenta separated itself from its attachments, but also upon the degree of shrinking that took place in the structure, the quantity coming away being astonishingly smaller than there was reason to anticipate it would be. Though convalescence is somewhat retarded by this method, in none of the five cases referred to have any complications arisen from the slightly prolonged suppuration. The foetal sac is treated upon the same lines that other granulated cavities are treated, packed and drained.

It seems to me the cases of ruptured ectopic pregnancy that are proper ones for the vaginal operation—and from the uncertainty in diagnosis few cases present for treatment before rupture takes place—embrace the larger number of instances of this erratic method of gestation. The pathology is confined to the pelvis. In the majority of instances, unless the operation is done for a primary rupture, the general abdominal cavity is easily shut off, and entrance from below insures an extra-peritoneal operation. The only condition under which I favor a laparotomy is when the operation is undertaken to save life from hemorrhage, the result of primary rupture. The abdominal cavity is not then closed, and must from any point of approach be opened, and the bleeding vessels are at that time more directly reached through the high opening. There is, moreover, in the abdominal operation, less disturbance of the healthy ovary and of the uterus, factors that should not weigh much against opening the peritoneum, but that should be taken advantage of when the operation cannot be extra-peritoneal.

A word in passing concerning the time for operating. The extra-uterine foetus in any condition or situation must be regarded at the best as a menace to life, and a constant source of apprehension that may suddenly tax our resources to their utmost capacity. But while we hold ourselves ready to rectify this mistake of Nature, when the rupture takes place, which is generally the first indication we receive of the condition, let us not be too ready to offer assistance. There is

in surgery always time to consider. In the first place, if there is profuse hemorrhage there is usually corresponding shock, but the conditions under which the hemorrhage occurs favor its limitation. In the second place, unless the case is of such an urgent nature as to demand an immediate interference in order to save life, we are not justified in operating during shock. I am aware opinions differ on this point, but I venture to emphasize my belief, as founded upon over twenty years of active surgical practice. I have never operated during shock that I did not subsequently regret having done so.

Having, therefore, a self-limited hemorrhage, and shock, of which the hemorrhage is the chief cause, and believing that the conditions are exceptional in which we should operate during shock, I wait, not necessarily until a second rupture, which will surely take place, and by so doing I avail myself of the processes of Nature, which will by adhesive inflammation close the general abdominal cavity above, and thus render it possible to remove from the vagina the extra-uterine foetus, together with the products of rupture, without the certain risks of an abdominal operation.

It becomes a nice question to decide how soon after this primary rupture we should operate. The point must be determined upon clinical grounds, and upon the general rules which govern the healing process. Reaction will follow rupture, and this will be accompanied with some degree of pyrexia; when this has subsided we may safely conclude that the desired protective envelope has formed, and the favorable time for operating arrived. Usually this will fall within two weeks of the rupture. When we feel certain that this time has arrived, there is no occasion for further delay; the vagina should be opened, and the sac cleaned out.

With our present well defined lines for the diagnosis of ruptured ectopic pregnancy, there should be no mistake in recognizing this condition, and equally, I think, there should be no question as to the time to operate. If we wait until a second rupture, we have waited too long, for by so doing we have subjected our patient unnecessarily to a second shock, and its attendant risk to life. A vagino-pelvic operation for ectopic pregnancy as early after the primary rupture as we feel sure adhesive inflammation has closed the abdominal cavity, is attended with slight risk, and is, it seems to me, the ideal method and time to operate.

Opening the abdomen for septic peritonitis, while theoretically approved, has hitherto been a therapeutical failure, and while I am among those who believe that no treatment so far devised will prove of the least avail in a well marked case of this lethal disease, I am confident that the condition is amenable to surgical asepsis, not only in its early stages, but beyond the time when it is usually considered to be hopeless.

Let us consider the pathology and the therapeutic indications.

Briefly, we have a toxemia which attacks the heart, the composition of the blood and the nervous system. The generators of this poison hav-

ing gained access to the abdominal cavity, continue their process as long as they remain there.

Operative surgery should be able to accomplish the removal of the septic organisms, and place the peritoneal cavity in such a condition that they could no longer find in it a culture medium. This is the limit of operative surgery; the poison already in possession of the system must be met with drugs, the discussion of which does not fall within the scope of this paper.

As far as I am aware, operations for septic peritonitis have heretofore been made only through the abdomen. I am not here speaking of the emptying of pus collections, but refer to cleansing the general abdominal cavity. My recent success in operating through the vagina in two desperate cases of septic peritonitis, has led me to question whether this is not the more scientific method of dealing with these cases. Both were post-operative; one an abdominal hysterectomy, the other a vaginal liberating of the utero-sacral ligaments for retro-flexion of the uterus. In neither could the source of infection be traced, and I am inclined to consider both as instances of the not very rare intestinal infection—auto-infection.

In the abdominal operation there was of course the superior incision, but this was re-opened only sufficiently to admit one finger for the purpose of guiding the irrigating trocar introduced through the vagina. In the other, the manipulation was carried on through the vaginal opening. Both were severe cases, with rapidly failing heart and intestinal paralysis, and both recovered.

These two cases do not furnish sufficient data upon which to build either a theory or a method of treatment, but I think the operation deserves a further trial, and I believe it will prove a legitimate extension of the field of vagino-pelvic surgery. My present theory of the advantages of the vaginal over the abdominal operation for septic peritonitis, is that the vaginal operation always causes less shock; that the abdomen can be cleansed, by the aid of my long glass irrigator, quite as effectually and with less disturbing of visceral adhesions, a most vital point in dealing with these cases, and that whatever counter openings may be made for drainage, and these should be made fearlessly in obedience to hydraulics, the vagina offers the most perfect natural route for draining the pelvis.

#### ON SHOCK AS RELATIVE TO SURGICAL CONDUCT.

BY ORANDO S. RITCH, M.D., BROOKLYN, N. Y.

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**I**N considering this subject we might inquire first as to the extent we would be justified in operating.

The gynecologist will tell you to operate as much as you can at one sitting; the general surgeon is more cautious.

Why is the surgeon cautious in large amputations to cut through the tissues with rapidity, but when he comes to saw through the bone and marrow to go slow and watch the patient for fear of a sudden shock and the patient expiring at once? Why are patients so severely shocked for removal of traumatic cataract?

Why are extensive injuries and bruises without much loss of blood watched with its utmost care? Why do we regard injury to the testicles with great apprehension? Is it because we fear shock, which may result fatally to our patient? What do we understand by shock, as applied to surgery? The general literature upon the subject seems to convey the idea that pathologists are not at all agreed as to the phenomena. The terms prostration without reaction, neuro-paralysis and stupor are about the only terms used, so that we have come to look at it as a condition producing death, following an injury without much loss of blood. Some pass it over as a general nervous depression and let it rest at that. In a case of supra-vaginal hysterectomy my patient was doing well, but she began to sink without apparent cause and died, and I satisfied myself that the operation being strictly aseptic, shock carried her off. A case of double subcutaneous osteotomy: I operated on one leg with dispatch, and repeated the same operation on the other. I thought as the patient was profoundly anesthetized shock would be reduced to the minimum, but to my surprise the shock was so terrific that I barely saved the little fellow's life. It was the experience in this case which impressed the subject strongly on my mind and I determined not to repeat the procedure. I believe that frequent anesthetizing is far preferable to too much surgery at one time. In a case requiring double amputation I determined to amputate one leg, wait for reaction, the other limb being dressed antiseptically and subsequently removed, with complete recovery. In order to bring this picture more vividly before our minds, we will suppose a healthy patient suddenly stricken with a compound fracture, but not much loss of blood. The surgeon decides to operate, the patient watches his every move with the closest scrutiny, there is not a muscle of his body in motion, the eyes are fixed upon the operator, he becomes anxious, his features are pinched, he feels faint. A cold, clammy sweat appears upon his face, you recognize the condition, and become anxious. Will you operate immediately? No, you must wait for the patient to react, but his lips are pale, his pulse is weak, there is a sub-normal temperature per rectum—and that, by the way, is the only place to take the temperature in this condition—he makes no muscular action to assist you; although there is no paralysis, you notice he breathes very lightly, there is insensibility.

You say he is dying, only to be followed by—he is dead! Such a picture as that seems to my mind to portray the condition. Now, what has caused this? First we say the injury, but what effect has the injury upon the system to produce shock? First, vascular disturbance, and second, nerve irritation. The best explanation is by

Fisher, who claims that the great mass of blood becomes stagnated in the veins, and as the skin is pale and cold, and without sensation, the muscles being deprived of blood cannot perform their functions. This seems to explain the loss of muscular powers, implicating those of respiration, which reduces the heart's action, produces muscular weakness, and accompanied with a reflex vaso-motor paralysis, seems to make the theory still more plausible. This could be verified by the shock following a superficial burn, covering a large area; this reflex vaso-motor paralysis is practically inhibitory; that is, when a nerve has been directly excited by injury or operation it seems to repel or thwart the action of muscles to which motion, volition and sensation are ascribed. This does not apply to the external muscles alone, but affects the heart and lungs. In shock we find no sensation to muscles, showing that the nerve plays an important part, while such is not the case with fainting, so that it is not the loss of blood we have to fear as much as the time consumed in an operation, and the parts handled or incised. We are aware of the sudden and great loss of blood occurring in women in the lying-in chamber, but stop the hemorrhage and the patient will recover, while if it produced more than syncope we might have many deaths to report. We are not unduly alarmed because anæmia is not a symptom of shock. I think the sudden evacuation of fluid contents will *not* produce shock, but fainting, syncope, coma, insensibility and death. Sudden death from so-called emotions of joy or sadness may assume the type of shock, because the nerves play an important part toward the heart; especially would this be true if the pneumogastric or its branches were excited.

The more the peripheral sensitive nerves are interfered with, the more reflex to the cord, nerve tissue and brain, and this direct or indirect irritation is conveyed to the heart and internal organs, which reduces the muscular power, produces vascular stagnation, and we arrive at the same point from another route. The brain is rarely other than clear, except just before death, which may help to account for the profoundness of the shock, and we judge that the sudden and great injury to peripheral or sensitive nerve terminals produces the most profound depression, so that it would appear that the immediate result of our work must be taken into consideration in deciding upon procedure. Because tracheotomy can be performed without anæsthesia does not argue that it is good surgery to do it, because a patient is helpless and barely able to comprehend what is going on. That it is wise to operate without profound anæsthesia; so far as primary, secondary and insidious shock is concerned, I believe they are largely one and the same. The primary is not usually one, when the symptoms appear soon after the traumatism and if this continues for a few days it might be called secondary, but it is practically a continuation of the first, and I believe that an insidious shock is a primary attack where Nature has failed

to fully react. The causes of shock are as varied as the multiplicity of severe injuries, and are usually observable and detected, unless one is of the opinion that shock is produced by pain, which would hardly seem to be the case. We know of patients suffering severe pain from disease for an indefinite length of time with no shock, while the sudden irritation of nerve centers or terminals produce it. In acute septic inflammation, as observable in wounds of the intestines, a collapsed condition is presented, which is a form of shock, and this is one of the conditions where symptoms of sinking and those of shock are quite similar. As to what can be accomplished when we are met with this condition depends largely upon circumstances. The first thing to settle is to thoroughly comprehend what is likely to be the result of our procedure. It would seem to me, although I am not quite ready to advocate it, that the promiscuous and liberal use of wet cloths and towels covering the exposed surface favor the lowering of bodily heat. That the too free use of irrigation, both external and internal, acts detrimental to the system, and I want to say by way of parenthesis, that I am an advocate of asepticism to the last degree, but, if I understand irrigation to mean cleansing and disinfecting, then, when we have accomplished that, it is obvious, though we start irrigating at 110° Fahr., the second effect of heat is cold, and it will come quickly and shock to the nerves is the result. There are times in the earnestness of operating when these conditions are not closely cared for. It would seem that warm, sterilized towels would answer the same purpose as antiseptic wet ones. Another preventative is to anæsthetize the patient outside the operating room, on account of the surroundings. We should plan our work for operating so as to reduce the time to the shortest period commensurate with the work to be accomplished, and after operating, to place the patient in a resting or recovery room close by, with as little disturbance as possible. As to the picture I depicted much might be said. I am becoming convinced that there is not much gained in immediate procedure when a patient is suffering severe shock, the result of injury. If the parts are properly protected and the hemorrhage controlled with strict antiseptics, a few hours' rest will greatly benefit the patient, and he will be able to stand the ordeal of an operation much better. We should not allow haste and excitement in emergency cases to dominate our better judgment. As to heroic prevention, transfusion used to be employed, but now is largely done away with, or at least ought to be, for in its place we have infusion of saline solutions, which may be injected into the median cephalic vein, or into the abdominal tissues, or by warm enemata of a quart every half hour. The usual solution is:

B. Sodii chlorid. 3 iss  
Sodii bicarb. grs. xv  
Aq. distill. 3 iss.

Statistics show that in shock, especially if associated with an ex-sanguinated condition, that

the lower bowels will absorb the saline solution with wonderful rapidity. As far as the stomach is concerned black coffee can be given, and this followed by digitalis, in gtt. doses, and if these fail, alcoholic stimulants.

# THE CONFUSION OF THE MATERIA MEDICA RELATING TO THE THEORY AND PRACTICE OF MEDICINE.\*

BY ELMER LEE, A.M., M.D., PH. B., CHICAGO.

**D**URING a recent visit to a patient, there happened to be present an old colored woman, who had recently recovered from a long illness. She told how sick she had been and how infrequent were the visits of her friends. On one of the sick days, she asked the Lord for just one favor. Her supreme desire, at that moment, consisted of a supplication that the Lord might give her a few drops of water to cool her throat. She informed me that the Lord was very busy attending to the white folks, so much so that it was not in her heart to make him any more trouble than was necessary. The draught of water was granted, and the simple faith of the old woman was forever established in the belief of the direct mediation of the Lord in her behalf.

A banker, dangerously ill, begged of his attendants, prior to my visit, for a cup of cold water, and the request was denied. Upon my arrival, he ventured to repeat the desire for cold water, thinking, that perhaps, it would be again denied. His gratification, when the water was given him, was both a delight to the physician and a surprise to the anxious and tearful wife. The severe and protracted vomiting which had occupied the greater part of the day, immediately ceased upon swallowing the cold water. The simple request of the patient had been regarded with fear and trembling by the inexperienced and untrained observers of his misery.

The actual demands of Nature are exceedingly few and simple. The recitals just given indicate two illustrations of the real demands of Nature when prompted to express itself. When the study of medicine is begun, during the years of adolescence, the alarm of the student on account of its vastness is well-nigh unbearable. A student confided to me that his fear of inability to remember the materia medica, strongly induced him to reconsider his plan of life. The outlook, he said, appalled him. He felt the responsibility that would attach to the career of a physician, conscious of the confusion in his estimate of the agencies used for the cure of disease.

The list of remedies recommended by the standard authors for the cure of disease is, indeed, enough to bewilder thought. The new forms which are daily added to the old list, are destructive to the peace and tranquility of even the mature medical mind. When the first pharmacopœia was prepared, in the days of Nero, the total number of articles contained therein was sixty. Prior to this formal collection, remedies for internal use

were seldom thought of, and scarcely ever used. The cure of disease was accomplished during the Hippocratic period by the use of hygiene and by external applications. The success of one who became celebrated at this time, consisted in his wondrous ability to mix an odd collection of strangely incongruous substances into a mysterious concoction. Since that day, a glance at the materia medica, as it exists, is sufficient to show that changes have occurred. Taking it all in all, perhaps the change is for the better. The present materia medica is too voluminous to practically examine, and a determination of its value is beyond the range of a short life.

The study of Bartholow during college days was as interesting as a romance. Fothergill's elaborate practice, and the prescriptions which it contained, surprised and delighted the inquiring mind. The recommendations were closely followed, and hope of the recovery of the sick was believed to be near at hand. The shock which followed disappointment of the expectations has never been forgotten. Page upon page of the materia medica was scrutinized for fresh material with which to meet urgent and anxious appeals from the patients. Experience after experience taught, that after all, the cure of the disease was remotely dependent upon the materia medica. The first decade of the physician is a series of experiments with the recommendations of the text-book. The failures which ensue are ascribed to inexperience, and hope springs afresh, in each instance, that a little more experience will teach the correct use of the all-powerful healing agents. The medical life wears on, and the hope of greater triumphs is deferred from time to time. The realization of the fond expectations of a perfect system of scientific medication ends in disappointment. Is this not the experience of the medical profession? Benjamin Rush exclaimed on his dying day that diseases were multiplied, and their fatality increased. It seems that the greater the array of material provided by pharmacy for the treatment of disease the greater the contention and the increase of confusion. Medical men are widely separated in their views in the estimate of values of different plans of treating disease. No common agreement prevails to any degree. During each generation some special form of medication has occupied the professional mind. One thing has followed another. A close student of the history of medicine will discover that which seems to be new is for the most part really old. We ask each other what is new? referring to what is good. There is always much that is new, but what is novel is not always useful. The prevailing tendency during our generation has been the development of an endless number of synthetic products from the laboratory of the chemist. Still more recently the development of a plausible system of treatment is based upon morbid animal fluids. It matters very little what the remedy is or from what generation it takes its origin; throughout the whole series the best that can be said concerning them is that they are drugs. There is no natural place in the human economy for drugs. Symptoms are sometimes controlled,

\* Read before the American Academy of Medicine, Atlanta, May 2, 1896.

modified and suppressed by the administration of the chemic agent, but it does not follow that the amelioration of a symptom is the same thing as the cure of a disease. In fact, the disease is cured by Nature and the public gives the credit to the drug, which is, fortuitously or unfortunately, swallowed. It is very well understood by the profession that the influence of pharmaceuticals upon the health of the body is practically a harm. But the estimate of the public is in favor of the apothecary.

My words are directed to confreres and not to laymen. The views, therefore, uttered by me are spoken in the deepest sympathy and with the utmost confidence in the intelligence of the profession. The pharmaceuticals offered for the use of the profession to-day number more than 10,000 preparations. The number of proprietary and patented medicines, which are recommended both to the profession and to the public by their makers, constitute a large percentage of the remedies which are prescribed. The tendency is to accept the teaching and the direction of corporations, whose scientific knowledge and interest in the profession is generally secondary to the pecuniary gain. We constitute a body of self-sacrificing and indomitable seekers for knowledge, and must forever regard invasion into our territory, by the self-interested vender of proprietaries, with suspicion.

Each successive group of medical graduates is elated by whatever prevailing medical belief that is popular at the time of his advent into the profession. Thus, it is seen, that incidents and training have a great deal to do with the views which are entertained, even at a later period of a career. From infancy the belief in the value of the drugs of the apothecary is impressed upon the mind, and remains as a guiding principle throughout the existence of the individual. A mother gives the child soothing syrup and paregoric, and anoints the chest with turpentine and lard, which produce upon the mind of the infant an impression which is never lost. The true or false value of these agencies has nothing to do with the fixed lesson which is remembered. It can be seen that owing to these drug impressions upon the young and growing mind, how difficult are reform processes in treatment, both in lay and professional ranks. The student is influenced by the lecture, and refers to the notes of the lecturer or the author's text-book. It was a common practice during the teaching of one celebrated lecturer to address the class somewhat like this: "Gentlemen, this is a case of asthma; not much is known of asthma, and the treatment is found to be very disappointing. The thing to-day is to find out what *drug* best agrees with the patient and to continue it." Whatever may have been the opinion by the class, the recollection that a *drug* was recommended is most difficult to remove from the memory.

The more numerous the list of remedies, the greater the confusion and difficulty for medical minds to consummate any agreement upon disputed ground. Differences in diagnosis exist, of course, but are infrequent compared to the wide disparagement between opinions with reference to

the treatment of disease. The object of medical study and the practice of the profession of medicine is for the exclusive purpose of rendering practical assistance to the sick. All other questions are subordinate to the actual requirements indicated by danger of death. It is not within the scope of my present remarks to advocate a remedy for the evil to which these observations pertain. There is, however, a system of treatment of every disease which is either remediable or curable, which does not contemplate the long rows of black and vari-colored glassware which ornament the apothecary's shelves.

In no other allied science would such a state of confusion be tolerated as that between the materia medica and the theory and the practice of medicine. Chemistry is definite, physiology is definite, and anatomy is stable; therapeutics based upon materia medica are unsettled. When may we expect a change for the better? Is it to come through the use of horse serum? Emphatically, no. Will coal-tar products reduce the materia medica to a science? No. The profession has been going on for over 3,000 years, studying the diseases of the body and experimenting to find out a system of therapy which is scientific. It is as far to-day from that perfection, which is desired by all, as it was 100 years ago. There were those at that time who succeeded in both ameliorating and curing disease. Such persons are among us also to-day. But the great mass of physicians, as well as the great majority of the patients, are controlled by a system of therapeutic reason far from scientific. There will be exceptions to my views, but the exceptions will melt away upon sifting the actual facts of the case. It is not my intention to throw any blame upon the manufacturers who are contributing these preparations, nor is it my purpose to unsympathetically criticize the practice of the profession. The state of affairs is accepted as the best by the majority and doubtless will continue. There has been confusion from the inception of the science of medicine, and it probably will go on indefinitely. It is my desire to call attention to the appalling burden which the materia medica has placed upon us, with reference to correcting the methods of practice, as taught to the students of our medical colleges.

#### ANTHRAX\*

BY CARL WEIDNER, M. D., LOUISVILLE, KY.  
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I HAVE here a pathological specimen which I think is of interest on account of its comparative rarity, as we are told, in this community. It is a specimen of blood which was handed me July 13th, by Dr. Albers, veterinary, for examination. Dr. Albers had been called to see some cows in the neighborhood, a number of the herd having been taken suddenly ill, and three of them

\* Read before the Louisville Clinical Society and reported by C. C. Mapes.

had died within the short period of twelve or twenty-four hours. He diagnosticated the condition as anthrax, a disease that has probably been studied more thoroughly than any other known bacterial affection, and one that is possessed of much practical importance, affecting as it does the human family as well as the *genus bovis*. It is an infectious disease caused by the anthrax bacillus, a comparatively large bacillus of typical shape, recognizable even without making a culture, which is found in the blood of animals affected, forming a true septicæmia according to the definition of Koch.

Dr. Alberts invited me to be present at the autopsy upon one of the animals, but as it was impossible for me to be on hand, he sent me a specimen of the blood for examination. The specimen was stained July 14th. The blood cells have been mostly destroyed, but the specimen is filled, as you will observe, with the bacilli of anthrax, which have a typical and characteristic appearance, leaving no doubt as to the correctness of the diagnosis.

I will exhibit the specimen and invite you to examine it, and while you are doing so I would like to make a few remarks. I think these cases are of considerable interest to us, and the subject merits serious consideration. The matter has already been reported to the State Board of Health, and it is to be hoped they will take proper action to prevent dissemination of the disease. Prevention here is of more importance than curative measures, and it seems to me that the first thing to be done is to destroy the infected animals and so protect the community from the ravages of this disease.

Anthrax is one of the most malignant diseases peculiar to animals, and is also looked upon as extremely dangerous to the community, as regards the human family, and adequate protective measures ought to be promptly instituted. I am told that the infected animals have been allowed to run around in the pasture for a week, even after the diagnosis of anthrax had been made; three of them died in the pasture with the other animals. One of the animals, at the time it died, was in a pond of water, so I am informed, and probably passed bloody contents of the bowel and bloody urine into the pool of water; other animals feeding in the same pasture are likely to drink water from the same pool, and the danger of further infection is thus largely increased. The animals that died, I understand, were sent out to the slaughter house, thus incurring the danger of infecting the men who work with the skins.

To my mind there is great danger of the poison contained in the blood of these animals being communicated to the human race by handling the infected parts, especially if there exists the slightest injury about the hands of the operators or those skinning the dead animals. I understand this is the first practical demonstration of the anthrax bacillus that has ever been made in the State of Kentucky.

Dr. Alber states that he thinks for the past two or three years there have been at different times cases of anthrax among the cattle in the same lo-

cality, and it is more important for this reason that proper steps be taken to exterminate the disease. The disease seems to have existed in that locality for several years, and each season makes its appearance, causing the death of several animals.

Infection occurs, as we all know, in this manner: The blood itself contains the bacilli; these bacilli can be easily destroyed if we use the proper methods. They form spores only if they come in contact with the air. If some of the blood of these animals, from bloody urine or bloody faecal evacuations, is deposited on the meadow grass or land where they pasture, the bacilli will very readily form little bodies which perpetuate this organism, and which are very tenacious, the so-called spores. The spores are very hard to destroy, even by chemical methods. There is danger that the disease will perpetuate itself in a certain locality; these spores may remain for months, or even years, until a favorable condition presents for their development again into bacilli, which are taken into the stomach with food, thus causing the disease.

The symptoms of anthrax in animals are bloody discharges from the bowels, bloody urine, collapse, great swelling of the abdomen; and they usually die within from twelve to twenty-four hours after first symptoms appear. On pathological examination we find outside of this condition of the blood the serous cavities filled with more or less bloody serum. All the lymphatic organs, especially the spleen, are markedly hyperæmic. The kidneys contain the bacilli, as do also the lungs, spleen and other organs of the body, constituting as has been stated a true septicæmia.

The bacillus of anthrax can be easily demonstrated with the microscope; with a drop of blood unstained, in two minutes you can make the diagnosis. The anthrax bacillus is recognized not only by its size, for there is no other organism as large, but also by its shape, the so-called bamboo appearance. The organisms join together, forming an appearance very much like the joint of a bamboo stick.

In the specimen which I show you the blood has disintegrated, and the bacilli are so numerous and characteristic that they can be easily recognized, whether you have ever seen the organism before or not. They have been stained by Loeffler's methylene-blue.

I consider the existence of anthrax in the community as a danger which cannot be looked upon with too much importance. As to the destruction of these bacilli: Boiling the meat will destroy them. If the meat has been exposed to the air for a short time, however, spores will develop and imperfect boiling will not destroy these. They are more resistant than the spores of any other organism, hence the danger from this source is correspondingly increased. Thorough boiling will destroy the organism itself, but the spores will often escape. A temperature of 145° will destroy the germ, while it requires a temperature of 236° for destruction of the spores.

An important point to be considered in this

connection is the disposition of the bodies of animals that have died from anthrax. The bodies of the animals ought not to be opened. They ought to be buried deep in the ground. Superficial burial is not safe, as the bacilli may be brought to the surface at some future time and further infection occur. Cremation would probably be the safest method, but so far as I know nothing of this kind has ever been carried out in this State, and we have no facilities for such disposition of the dead bodies.

#### DISCUSSION.

Dr. William Bailey: After a careful investigation of the cases of anthrax reported near this city, as a member of the State Board of Health, I will say that there are two herds of cattle infected, three having died in one herd and one in the other. The herds represent approximately thirty head each, just at the outskirts of the city.

I regard it as the most serious condition we have had among cattle in this State, from the fact that it is not only dangerous to valuable herds of animals, but it is likewise dangerous to the human race. In the specimen before us the bacilli are thoroughly demonstrated; if there is any bacterial disease it is anthrax, and the demonstration is absolute and complete. The germ itself is easily destroyed. As already stated, a temperature of  $145^{\circ}$  destroys the bacillus of anthrax, but unfortunately this is not true as regards the spores; this is one of the spore-producing germs, and meat containing the spores requires boiling for more than half an hour for their destruction. Temperature up to  $235^{\circ}$  or  $240^{\circ}$  should be continued for a considerable length of time if you suspect that there has been formation of spores, in order to prevent possible infection afterward, so that the only proper disposition of the carcasses of the dead is total destruction by fire. Burial does not answer the purpose, although this is practiced. Deep burial might give you extermination, and yet it might not. It has been demonstrated that from carcasses buried to a depth of four feet, germs have come to the surface; whether brought up by earth worms, by water, or in whatever manner, they have come to the surface and as cattle grazing upon this ground have become infected months or even years, as much as five years afterward, it may be the source of contamination. So it is a very difficult thing to remedy, and consequently the only safe process is absolute and entire destruction of the carcasses, and if it were possible this should be done by putting them into a crematory and bringing about absolute destruction by fire. I would say that in regard to the present cases, unfortunately this has not been the disposition. Before it came to the knowledge of the Board of Health, three of these cattle had already died and had been carried away by the dead animal contractor and disposed of as you know they are: The contents of the intestines are mixed with bone, etc., for fertilizers, and no doubt the skins saved for their value, which may be the source of malignant pustule to some poor man who has the handling of these hides. They may now be in the market or in the vats of the tanner, and may

be the source of subsequent trouble. The disposition of these products we have been unable to follow out. I admit it would have been most desirable, if it were possible to have accomplished it but the matter was not called to the attention of the Board of Health sufficiently early to do so.

The danger from the milk, I take it, is more from the possibility of a sore upon the udder or teat of the cow, from which a drop or so of blood might contaminate the milk, than from the milk itself. I am not prepared to say that the milk from an animal so diseased contains the germ, but if you will investigate the authorities you will find a very large percentage of cows carelessly cared for are, as a rule, subject to lesions upon the udder or teats, and from milking a drop of blood might easily contaminate the milk supply, and that would be quite sufficient to make it dangerous. At any rate, I would not think that the milk from such a cow was at all safe to be used. Fortunately, the cow so diseased ceases almost immediately to give milk. The sickness is so promptly developed that attention of the owner is called to it, and they are so seriously diseased from the very inception that there is not much danger of the milk being used from a cow after she becomes the subject of the disease. Death takes place, as a rule, promptly. The cow shows serious trouble and the temperature becomes elevated, which, however, does not continue for a great length of time. Later on in the history of the case, the temperature may be normal or even sub-normal. With the inception of the disease, however, there is usually an elevation of several degrees. She is found in her stall or place where she is kept, with marked depression, with pulse rapid, and fever; unable almost to stand; she leans against the halter or side of the stall; she is dejected and depressed; goes into collapse and dies in this way, frequently, as I have stated, having bloody discharges from the bowels, also bloody urine, etc. The malignant pustule does not supervene when the disease is propagated by infected food being taken. The malignant pustule is a local lesion, consequently we find it on the mammary glands of a cow so diseased, or on the hands of those handling the hides of the cattle. In this way malignant pustule is a local infection, but when the bacilli are taken into the stomach, or taken into the intestinal tract, it may be the beginning of infection by lesion of the mucous membranes of the mouth, gullet, stomach or intestines, or it may pass into the lungs and cause trouble there. From this, infection may be carried into other structures of the body. Thus it will be seen that the meat is dangerous, as is also the milk, particularly if there is any possibility of a drop of blood getting from the animal into the milk.

Cases have been reported where large herds have lost twenty, thirty or forty head, and when the balance of the herd were removed to higher, more open country, put upon new pastures they have been quickly relieved; that is, new cases have not developed, and in those animals infected the disease was not so fatal. Of the first

cases, like all endemics of this kind, nearly all of them die. Later on a large per cent. of them may get well.

I am inclined to think there has been no anthrax in that neighborhood before, although it would be very easy indeed for it to be an infected district, because of the readiness with which the bacillus of anthrax lives and may be perpetuated by means of the soil. Certain kinds of soils seem to be particularly favorable for the preservation of these germs, the clayey soils, those that do not dry out well, low lands, those which are marshy, etc., seem more favorable to the growth and development of the anthrax bacillus than dry, higher ground. It may be on account of the water that is retained, or that in some way the soil is suitable for their development.

The period of incubation of the disease (anthrax) is from one to six days; it may develop in twenty-four hours, and cases have been reported where the disease has come on as late as ten or twelve days after exposure, but three or four days is the average period of incubation.

Some one has asked the question whether the anthrax antitoxin has been employed in these cases. We have had so little to do with anthrax in this country, that I suppose a supply of the antitoxin is not kept on hand, as is the case for diphtheria. I will say that antitoxin has not been used in these cases, and I doubt if it could be found in Louisville. Statistics show that in cases where the anthrax antitoxin has been used the disease was exhibited in a much milder form. Although the remedy does not seem to be curative, the course of the disease is rendered more mild, and many of the infected cattle recover, but like diphtheria antitoxin, it should be employed early in the case.

#### TALKS WITH YOUNG MEN ON THE SEXUAL FUNCTION.

BY W. F. MORGAN, M.D., LEAVENWORTH, KANSAS.

##### PART III.

IN these informal talks reference has already been made to practical therapeutical hints that have been found useful in the treatment of certain diseases of the sexual organs.

Although we are chiefly considering prophylactic measures, I will offer a few more suggestions which may be utilized by those unfortunately deprived of the care of a good physician. However, it should be distinctly understood that in all serious or persistent forms of disease, the advice of a physician is usually indispensable, and should be as promptly secured as may be possible under the circumstances. And just here allow me, at the risk of seeming too much influenced by the *esprit de corps*, to advise you to always avoid the peripatetics, who, in traveling from place to place, are able to shirk the just responsibility of their acts, but rather seek the well-known and permanently located practitioner, who is always at hand, and knows that he may be called upon at any time to explain to a jury of his peers

the whys and the wherefores of his medical practice.

Let us again refer to the important matter of diet:

Though each one should learn his own peculiarities, still very few young men can use cheese, or eggs, or asparagus for the evening meal without being annoyed the following night by erections, frequent urination and possibly by seminal emissions, etc. And yet if these are eaten from eight to twelve hours before retiring and the meal is followed by exercise, they may do no harm. Even watermelons, when partaken of near the hour for retiring, will generally cause excitement of the sexual organs, a fact said to be fully appreciated by our colored brethren. In fact, anything which increases the activity of the urinary organs, is liable, at the same time, to excite the sexual organs. The basis of treatment of spermatorrhœa and hyperæsthesia of the sexual system, is a diversion of the nervous force from these organs to the brain and muscular system. This principle serves to explain the fact that college girls sometimes experience an arrest of the menstrual flow, which is again restored at the close of their arduous studies, and it also explains why it is that a supreme effort of either mind or body, and often the mere anticipation of such an effort, serves to extinguish all sexual desire. This abeyance of desire sometimes becomes habitual in those whose minds or bodies are kept in a condition of constant tension.

In applying cold water to the genitals, a convenient method is found by taking an ordinary ten-quart pail and perforating the bottom for attaching a rubber tube with clamp. The tube should have a  $\frac{1}{4}$ -inch nozzle, and be two yards long. The pail, filled with cold water, is suspended by a hook six feet from the floor. The patient sits over a bath-tub and allows the stream of water to fall upon the genitals from five to ten minutes. The beneficial effect seems due to the impact of the water, combined with the cold. The best time for this douch is generally just before bedtime.

In many cases water as hot as can be comfortably borne produces a better and more permanent effect than cold, and in applying it only a quart cup is necessary, the genitals being simply immersed in the water from five to ten minutes. When the scrotum is pendulous and the parts are relaxed, and especially where there is a varicocele, a suitable bandage may be made by taking shoemaker's webbing and cotton flannel for lining. Strong safety pins are better than buckles. The bandages sold in the shops are generally too slight to exert the requisite degree of compression, but a cheap one may be purchased to serve as a pattern. When the knack is once acquired of making a proper fit in the scrotal bag, no further trouble is usually experienced. The opening for the penis should generally be just large enough to receive the tips of four fingers, and thickly lined with cotton flannel. If the scrotum is pendulous, the redundant scrotal tissue should be drawn through the opening by the side of the penis. A bandage of this sort will

promptly arrest the constant tendency of a varicocele to increase in size, and will cause it to gradually decrease, and at the same time afford much comfort to the wearer, by giving a sense of firm support, and by relieving the dragging pains so characteristic of the disease. To avoid becoming too dependent on artificial support the bandage should be left off an hour each day. I have been thus minute in describing this home-made bandage, as one of my hearers has modestly informed me that he is lacking in even that "little ingenuity" requisite for making it without a fuller description than was before given.

The condition of the rectum and bowels also exerts a potent influence over the sexual organs. It is necessary to establish the *habit* of regularity in the action of the bowels, and nearly always this is practicable. As constipation and spermatorrhœa are frequently associated, I will offer a few suggestions as to the best method of securing a daily evacuation. A proper diet is of the first importance. Vegetables and fruits should be freely used, and, half an hour or more before breakfast one or two tumblers of cold water can usually be drank without discomfort and with decided benefit. Good beef and stale or graham bread are staple articles, and may be occasionally exchanged for others, according to the peculiarities of each case and the particular form and stage of the disease. When the patient feels a call to empty the bowels it should, if possible, be promptly attended to, otherwise the peristaltic movement of the intestines seems to be often reversed, returning the contents of the rectum to the colon, and thus a very serious form of constipation is sometimes produced.

If practicable it is well to have a regular hour for stool and never permit this time to pass without the daily movement. Until this habit of regularity becomes fixed the first attempts may fail. Then go about your usual duties, but give due heed to the first intimation that the bowels are ready to act. It frequently requires less time and trouble to have two, or even three, evacuations a day than one, for the obvious reason that in the former case the fœces are more fluid in character and hence pass more easily. At first it may be necessary to resort occasionally to the use of a syringe, and when the condition of the tongue and general system demand the use of laxatives, *nux vom.*, sulphur, or hydratis canadensis, or cascara sagrada will usually relieve. When it is necessary to make a more decided impression, the following combination is useful:

R Aloes.....	gr. j.
Strychnia.....	gr. i-10
Ext. belladonna.....	gr. ss.
M. et ft., pil. six.	

Sig: Take one pill morning and night until freely moved. When at stool do not hurry, but give the bowels plenty of time to act.

Benjamin Franklin was of the opinion that in matters purely moral and intellectual the most practical basis for self-improvement was the cultivation of a *habit* of right thinking and acting, and that when such a habit became permanent, it was just as easy to think and do right as wrong.

And if it is permissible to transfer this idea to things physical, I would say that when all the bodily functions are trained to act in a normal and regular way, then we have perfect health. And no one can be healthy who continually resorts to the use of drugs, which, like crutches for the lame, should be as soon as possible cast aside. In concluding this particular phase of our subject I would quote the axiom: "Keep your head cool, your feet warm, and your bowels open."

So far as drugs are concerned in the treatment of spermatorrhœa, we usually need very few. *Nux vomica* is often useful, especially when there is constipation, potassium bromide and camphor mono-bromide when drug sedatives are required, and for the hyper-sensitive urethra the occasional introduction of the steel sound. The galvanic current is sometimes useful, in some cases the faradic is better, and in still other cases both forms of electricity may be required.

A patient suffering from spermatorrhœa should have his bedroom well ventilated, and use as little bed covering as possible without decided discomfort. His mattress should not be too soft, and he should rarely indulge in a feather bed, even in the coldest weather. Seminal emissions occur more frequently when the patient is lying on the back, and in order to avoid this position he may adopt the simple expedient of tying the neck of a six or eight ounce vial into the back of his night shirt, so that when he turns upon his back the uncomfortable pressure of the vial between his shoulders causes him to awake and turn again upon his side.

Constitutional and tonic medication may be used, according to the special indication in each case. In the incipient stages of a gonorrhœa, aconite and acetanilide are useful for fever and pain. The bowels should be kept open and alkaline drinks given to correct the hyperacidity of the urine. The patient should be kept quiet—if possible, in bed—and his diet should be light and unstimulating, combined with local applications of hot or cold water, and he should have the care of a medical man.

If any of my hearers now have questions to ask I will try to answer.

First Hearer: Doctor, in your study of comparative physiology, have you learned any facts bearing upon the effect of sexual intercourse during pregnancy.

Doctor: Yes; I have learned only of one viviparous female among the lower animals that is known ever to voluntarily receive the embrace of the male during pregnancy, and that is the mare, and very few mares are of this sort. The best colts seem always to come of mares that refuse the horse after conception has occurred. Instead of wasting any of her nervous force in useless sexual intercourse, the best brood mare reserves it for the more perfect development of her embryo.

Second Hearer: Does this rule also apply to the human female?

Doctor: So far as I know it does.\*

\* We have known of instances in which this was not the case.—Eds.

First Hearer: Doctor, I understand that men sometimes act as if the marital relation permitted them to ignore the inclinations of their wives regarding sexual intercourse. Can you give us any facts from comparative physiology which have a bearing upon this matter?

Doctor: Instances have come to my notice of men owning valuable mares which would never voluntarily take the horse, and which were coerced. But in every case the result was unfavorable. I think this shows very plainly that "instinct" is often wiser than the so-called reason of man. In writing of dyspepsia, I recall that the late Prof. Austin Flint once made a similar observation regarding the instinctive longings of the appetite for certain articles of food.

First Hearer: Doctor, occasionally I seem to become slightly mixed in my conceptions of the different "instinctive longings;" e. g., a man and woman may desire intercourse, when if indulged and followed by pregnancy, the consequences might be very serious.

Doctor: Your remark is pertinent, and just such instances afford an opportunity to use those higher faculties which we, as men, possess, and which have been denied to the lower animals. In woman, when the desire is based upon the pure maternal instinct, it is at once lifted above the plane of mere animal instinct, and usually relates to one man—by the Divine as well as human law—her husband. And thus alone, with very rare exceptions, is individual well being promoted, and human society held together. Every experienced physician has met women in whom the maternal instinct is so strong that they submit to intercourse even when, as sometimes happens, it is attended by severe pain, rather than be thwarted in their desire for offspring. Other women, of character and veracity, have testified that, though the mothers of large families, they have never experienced pleasure in sexual intercourse.

Third Hearer: Doctor, have you found instances among the lower animals to parallel those just mentioned as belonging to our species?

Doctor: Yes, so far as the mere begetting of offspring without the sexual desire is concerned.

Fourth Hearer: Doctor, I have lately read this little book (which I hand you) inculcating the peculiar sexual doctrines said to have been held by the members of the Oneida Community. If you have studied these doctrines, I would be much obliged if you will give us your opinion of them.

Doctor: Well, I have investigated—to some extent—these doctrines, but fear that, were I to answer your question as fully as it seems to deserve, both our time and our patience would be exhausted. However, I will state briefly that while the sexual doctrines of the Oneida Community enforce a partial self-control, we must admit that they are better than a complete surrender to mere passion. Still, they teach only a mitigated form of sensuality, and so far as I can learn, no very permanent, happy or healthy organization of family or community has ever been built upon this sandy foundation.

First Hearer: Doctor, how frequently can the

average woman pass through the process of gestation with justice to herself and her offspring?

Doctor: Well, there are, of course, exceptions to every general rule, but I think the average interval between births should be about thirty months. Some can bear a healthy child every two years; others need an interval of three years or more. I have met with but few women having such an over-plus of vitality as to enable them to develop a healthy child *in utero* and at the same time nourish another at the breast. Besides the drain of child-bearing, the vast majority of parturients have so many other demands upon their minds and bodies that even a very large stock of health is sometimes exhausted.

Third Hearer: Do not the conservative forces of Nature often protect women from too frequent conceptions?

Doctor: Yes; and it is quite generally known, for example, that they are less liable to conception during the period of lactation.

Fourth Hearer: Suppose conception should occur when the mother is nursing an infant of, say, three to six months old, what is liable to be the result?

Doctor: Unless the mother has an unusual amount of vitality, either the child at the breast is liable to sicken, or there may be a miscarriage, or the mother's health may break down, and in some extreme cases her own life, the life of the nursing and the embryo, are all lost.

Fourth Hearer: Are lives often sacrificed in this way?

Doctor: Certainly; and I have learned from the veterinary authorities that the Jersey cow in particular, yielding as she does a very large amount of rich milk, when allowed to become pregnant too frequently, gives birth to more weakly calves, which, as well as their overburdened mother, are more liable to be attacked by tuberculosis than are animals placed under more favorable conditions. As before stated, the physiology of man seems to rest upon precisely the same basis as that of the lower animals, among which, so far as the reproductive organs are concerned, is to be found the substantial counterpart of nearly every physical condition presented by the human being. And in order to avoid these penalties, it is only necessary to employ self-restraint, or, in other words, to enforce the same rules of good sense and good judgment upon ourselves that we do in the management of our domestic animals.

The sole object of life is development. No one ever reaches his physical, mental or moral ideal, but every one can make the best and the most of the organization with which Nature has endowed him.

The time allotted to our discussion having now expired, I wish to say to those of my hearers who have expressed an interest in our talks upon the sexual function, that I have been thus explicit and emphatic in presenting these views, for the reason that thirty-four years of practical experience as a physician have convinced me of their importance. We are taught by the great lessons of history that individual families and nations, when at the very

zenith of their power, their wealth and their fame, may be attacked and destroyed by the dry rot of sensualism; yet, through the Divine law of evolution, mankind as a whole seems to be advancing steadily and irresistibly toward a higher and better way of living.\*

### RETROSPECTIVE THERAPEUTICS.

By Alfred K. Hills, M.D., Fellow of the Academy of Medicine, New York.

#### Hyoscin Hydrobromin in the Treatment of Insanity.

—Dr. H. R. Costons, in an original communication to the *Nashville Journal of Medicine and Surgery* for August (*Am. Med. Rev.*) says: Hydrobromin of hyoscin in doses of from one-fiftieth to one-twentieth grain, far exceeds all other remedies which I have ever used in any form of insanity. It must be given freely. I have never seen any bad results from its use, and in a case of acute melancholia with insomnia of a week's duration, which I had the pleasure of seeing in consultation with Dr. Davis, in which morphine and bromides had no effect, I gave one-tenth grain at one dose, and the girl was asleep in two minutes and slept eleven hours. She made a good recovery. After a large dose the patient will make a few gasps, and unless you are well acquainted with the action of the drug—not from reading but from bedside observation—you will think he will be dead in a few minutes; Let the patient alone and he will be all right; go to administering restoratives and you will kill him.

**Disinfection of the Mouth in Scarlatina.**—The *American Medico-Surgical Bulletin* states that at the Société des Hôpitaux, in Paris, M. Lemoine recently advanced the theory that the period of contagion in scarlatina is at the beginning rather than at the close of the disease. According to this view, the secretions of the mouth and pharynx are the dangerous elements rather than the desquamating epithelium; the disinfection of these cavities should, therefore, take first rank among prophylactic measures, and the period of isolation to which cases of scarlatina are at present subjected should be considerably shortened.

This theory is important, in that other eruptive diseases, as measles and smallpox, may perhaps be transmitted by the same means.

Until the pathology of these diseases is better known, it seems rational treatment to disinfect the mouth and pharynx, thus possibly rendering a service both to the patient and to the attendants.

**The Alcoholic Treatment of Carcinoma.**—Dr. Hasse, Nordhausen, read a paper on this subject at the Surgical Congress (*Med. Press and Circular*). He had made a communication on attempts to treat carcinoma by alcohol in 1878. The treatment consisted in the injection of alcohol into the circumference of the growth, and in three cases of carcinoma of the uterus had led to good results. He continued his observations for a year, and since then he had waited. After twenty-three years all the patients were alive and well. This result was very remarkable, and was superior to that obtained by surgery. The treatment was suitable for mammary carcinoma. It had the inconvenience of taxing the patience of both patient and surgeon, but it had the immense advantage of protecting against recurrence. The treatment owed its success to the formation around the growth of a connective tissue capsule, that obliterated the blood vessels and induced shrinking of the tumor. He asked his colleagues for further cases to treat.

**Erysipelas and Syphilis.**—Rudolph (*Centralbl. f. Inn. Med.*, Feb. 1, 1896) cites the case of a woman, aged twenty-five, who, five years after contracting syphilis, was suffering from severe headache, paresis of the left side of the

face, and occasional clonic spasm. In addition, there were enlarged submaxillary glands and a chronic arthritis affecting both knees. Syphilitic cachexia was marked. She had been through several courses of anti-syphilitic treatment, including mercurial injections and inunction. After an attack of erysipelas the patient was cured of her chronic syphilis; the glands went down, the pains in the head and joints disappeared and the facial paralysis gradually yielded. For a year she remained free from any syphilitic manifestations, when a gumma appeared in the leg. She would not submit to further anti-syphilitic treatment. The rapid and beneficial effect brought about by the erysipelas in this case was striking. The cure was not permanent, but the erysipelas had more effect on the disease than the anti-syphilitic treatment.

**Aristol for Burns.**—In an Italian journal (*Incurabili*) Dr. Eriberto Aievoli has recently reported his experience with aristol, and expresses the opinion that in fresh wounds, burns and frost-bites, the remedy is deserving of extensive application, as it fulfills all the requirements demanded in these conditions. These properties are, essentially, lack of toxicity, rapid relief of pain, and rapid formation of a non-contractile cicatrix. The drug was always employed in a 10 per cent. ointment, which was spread on sterilized gauze and applied to the affected area. Two cases are described in detail, relating to extensive burns of the second and third degree, which healed rapidly under applications of aristol ointment, while other remedies had proved inefficient. A special advantage of this treatment was the ease with which this dressing could be removed. Owing to the slight secretion and the formation of healthy granulations, the dressings did not become adherent and could be removed without pain. The superiority of aristol over boric acid was constantly demonstrated.

**Guaiacum in the Treatment of Gout.**—Garrod (*Lancet*, May 30, 1896), at a meeting of the Royal Medical and Chirurgical Society, read a paper upon the above subject. Numerous observations, covering a period of many years, led him to believe that he had been successful in establishing the following points in regard to action of guaiacum:

1. Guaiacum was innocuous, and might be taken for an indefinite period of time, and looked upon as a condiment rather than as a drug, as harmless as ginger or any other condiment.

2. Guaiacum possesses a considerable power, but less than colchicum, indirectly relieving patients suffering from gouty inflammation of any part. It might be given whenever there was but little fever.

Guaiacum taken in the intervals of gouty attacks had a considerable power of averting their recurrence; in fact, it was a very powerful prophylactic.

4. Guaiacum did not appear to lose its prophylactic power by long continued use.

5. There were a few persons who could not readily continue the use of guaiacum. For such cases there were other drugs whose action was in some respects similar as prophylactics—perhaps serpentary was one of the most powerful of these.

In the discussion which followed the reading of the paper, Dr. Murrell said that he could support Sir Alfred Garrod's conclusions as to the efficacy of guaiacum in chronic gout. He had used the drug during the last six years at the Westminster Hospital, not only for chronic gout, but for rheumatism, tonsillitis, and chronic bronchitis associated with the gouty taint. He preferred guaiacum in large doses, namely, 20 grains three times a day, the resin being about four times the strength of guaiacum itself.

**The Treatment of Sciatica by Compression.**—According to the *Bulletin Med. de Paris* (*N.Y. Med. Jour.*) M. Negro has reported 113 cases of rebellious sciatica in which the above treatment has resulted in recovery. The procedure is as follows: The patient lies on his face with his legs extended and resting easily one against the other. The most painful spot is selected—the region where the nerve proceeds from the large sciatic opening. On its trunk both thumbs are applied and it is compressed with the greatest possible force. At the same time slight lateral movements

\* In the quotation from Emerson, Part II. of this series, lax should be tax, so to read: "So signal is the failure of all attempts to make this separation of the good from the tax," etc.

are made without changing the point of pressure or moderating its intensity. This takes from fifteen to twenty seconds, and is followed by an interval of twenty minutes' rest, when the procedure is repeated. After a second application, which is much less painful than the first, the patient is able to walk, and for several hours, or even a day, he may be free from pain.

In order to obtain complete recovery, says the author, this procedure should be practised about six times a day every two days, until the definite suppression of the neuralgia is obtained.

**Thermo-Therapeutics of Gonorrhœa.**—Neisser has stated that the gonococcus loses its power of development at a temperature of 113 degrees. Callari (*Gaz. Degli Osp. e Degli Clinici*) has found that the normal male urethra will bear this temperature and the female two degrees higher. He has been treating gonorrhœa with injections at 113 degrees and reports a progressive disappearance of the gonococci in the majority of cases with this treatment. In order to avoid unnecessary congestion he injects a 6 per cent. solution of cocaine ten minutes before.

**Normal Salt Solution.**—Dr. Warren B. Outten, Professor of Surgery in Beaumont Medical College, St. Louis, maintains that normal salt solution acts with vigor and success in the treatment of a suppurating wound, and unless there is a great amount of pus, dressings can be left on for eight days without change. He further declares: "It can be demonstrated that a wound treated by the corrosive sublimate solutions and other antiseptics sometimes remain painful, but when a change is made by using the saline solution, ease is manifested at once. Again, the granulations show less tendency to exuberance and inflammation, and present a regular, uniform and healthy-looking surface. We certainly believe that the withdrawal of irritating antiseptics in the treatment of granulating wounds, and their replacement by mild, unirritating aseptic solutions, will be a positive and common-sense advancement in the treatment of suppurating wounds and superficial inflammation."

## RETROSPECTIVE DIETETICS.

**How Much Water Should We Drink?**—According to Prof. Allen we should drink from one-third to two-fifths as many ounces as we weigh in pounds. Therefore, for a man weighing 168 pounds there would be required fifty-six to sixty-four ounces daily, or from one and one-half to four pints. This the *Journal of Hygiene* regards as a very indefinite answer. The amount of water required depends on the season of the year, the amount of work done and the kind of food eaten. In hot weather we require more than in cold, because of the greater loss through the skin, though this is in part made up by the lesser amount passed away through the kidneys. If a man labors very hard he requires more than if his labor is light. A man working in a foundry, where the temperature is high and the perspiration profuse, not infrequently drinks three or four gallons daily.

If the food is stimulating and salty more water is required than if it is bland. Vegetarians and those who use much fruit require less water than those who eat salted fish and pork, and often get along on none except what is in their food.

In most cases our instincts tell us how much water to drink far better than any hard or fixed rule. For ages they have been acquiring a knowledge of how much to drink, and transmitting that knowledge to descendants, and if we follow them we shall not go far out of the way. It is of more use to us to know that pure water is essential, and that *impure water is one of the most dangerous of drinks*, than to know how much of it is required daily.

If one lives in a region where the water is bad, it should be boiled and put away in bottles well corked in an ice chest, and, in addition, one should eat all the fruit one can, if fruit agrees. Fruits contain not only pure water, but salts which are needed to carry on healthfully the functions of life.

**Diet as a Moral Agent.**—We learn from the *Medical Review* that a food experiment is being tried at the Elmira Reformatory, in this State. All civilized nations hold out some inducements to the criminals in confinement to sooner secure their release from legal restraint. A certain amount of time is always taken off for good behavior. The criminal has often been exhorted to this end by relatives and friends. His manhood, his future, his ambition and his hope of quick release from confinement have been appealed to, and in many cases in vain. Now it is to his stomach that the appeal is to be made.

The proposed experiment contemplates a somewhat enlarged scale of dietary privileges, increasing from grade to grade, from the lowest to the highest, so that within due and proper limits they can out of their own accumulations have the privilege of selecting meals at their pleasure. The prisoners, under the wage-earning system of the Reformatory, as it is at present, must earn their living and keep a credit balance to their accounts, respectively, in order to progress towards their release by parole. A prisoner, to maintain a credit balance, must needs restrain, regulate and exert himself in a manner which accomplishes and shows his improvement; but hitherto the diet rate has been inflexible. It is believed that if more latitude is allowed and the prisoner has a chance of tickling his palate occasionally with mince pie, a juicy roast or other homelike dainties, he will be more likely to make an extra effort to reform. In other words, if he has an inviting menu to choose from for breakfast, dinner and supper he will get up and hustle and be a man.

**Necessity of Strict Dieting in Skin Diseases.**—Brocq (*Jour. de Med. et de Chir.*, March, 1896; *Med. and Surg. Reporter*) insists that not only are there certain kinds of food which provoke immediate eruptions of the skin, but that others act with a more delayed effect. It is generally easy to obtain from a patient a promise to abstain from food that produces ill effects, no matter how pleasing it may be in taste, if these effects are immediate, but when the effects become apparent only after the lapse of considerable time, as in gout or rheumatism, it is hard to obtain such a promise. Yet it is reasonably certain that effects upon the skin are often produced as remote in time from the ingestion of the deleterious articles of food, as in the case of these two named diseases, although unfortunately for science, this remote effect is denied by the majority of dermatologists.

It then seems logical to advise arthritic people to observe a strict diet if they wish to avoid annoying eruptive attacks. They should particularly abstain from coffee, liquors, wine, beer, dark meats and acid vegetables and fruits. Persons affected with acne must avoid salty cheese, preserved meats and fish. These precautions must be particularly observed when an attack is imminent, because of development of the morbid predisposition. The articles of food mentioned can play a role of accidental cause under these conditions and have an immediate pathological effect.

**Cancer and High Feeding.**—It appears from the last issued report of the Registrar-General that the proportional mortality in England from cancer is four times greater than it used to be half a century ago. A remarkable decline in the death rate from phthisis and tuberculous disease has coincided with this great increase in the cancer mortality, hence there is some truth in the curious paradox that a high cancer mortality is an indication of good sanitary conditions. No single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. The gluttonous consumption of meat, which is such a characteristic feature of the age, may be regarded as especially harmful in this respect. Statistics show that the meat consumption in England has now reached the amazing total of 126 pounds per head per year. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it is likely that it may excite in those parts of the body where vital processes are still alive, such excessive and disorderly cellular proliferation as will eventuate in cancer. No doubt other factors co-operate, and among these may especially be mentioned deficient exercise in the open air.

# The New York Medical Times

A MONTHLY JOURNAL

OF

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## REMOVAL.

The office of this Journal was removed, May 1st, to 180 West Fifty-ninth street, Central Park South.

Changes of standing advertisements and communications in regard to that department, should be addressed to BENJ. LILLARD, Advertising Manager, 108 Fulton St., N.Y.

## DISCOVERY OF ANÆSTHESIA.

THE "semi-centennial anniversary," recently held in Boston, of the discovery of anæsthesia, suggests the question: Was Dr. Morton really the discoverer of anæsthesia in 1846, or did Dr. Wells, of Hartford, precede him by two years, making the real discoverer not Dr. Morton, but Dr. Wells, and the correct date, not 1846, but 1844? On the 10th of December, 1844, Dr. Colton gave an exhibition of nitrous-oxide or laughing gas. While under its influence the person fell and severely bruised himself, but stated later to Dr. Wells that at the time he felt no pain. This first suggested the idea to Dr. Wells that he was dealing with an anæsthetic, and the next day, December 11, 1844, under the influence of the gas he had a tooth extracted without pain. This was the first tooth ever drawn without pain. It is on record that at the suggestion of the venerable Dr. Marcy, now of this city, but at that time in active practice in Hartford, Dr. Wells, in 1844, gave sulphuric ether to a gentleman for the removal of a wen from the scalp, the operation being entirely painless. Two years ago the U. S. Dental Association gave a grand celebration in Philadelphia, of the fiftieth anniversary of the discovery of anæsthesia by Dr. Wells, which called together over 2,000 people, including members of Congress, college professors, physicians, etc. In the very able papers read at that meeting, the history of the grand discovery was established beyond a

doubt, and the credit given to Dr. Wells. A monument, costing \$5,000, given by the State of Connecticut, now stands in Bushnell Park, Hartford, Conn., erected to the memory of Dr. Wells, giving the date of his discovery of anæsthesia. After the death of Dr. Wells, a bill was introduced into the United States Senate, at the request of Dr. Morton, giving him \$100,000 for his discovery. The Hon. Truman Smith, from Connecticut, presented on the floor of the Senate, in a masterly argument, the real facts in the case, and established so conclusively the claims urged by the friends of Dr. Wells, that the bill was defeated by thirteen majority. It was during this period that a wealthy gentleman of Boston left \$10,000 in his will to commemorate the name of the man who discovered the anæsthetic power of ether. The monument was erected, and stands in the Public Garden of Boston, but no name has as yet been recorded upon it.

Great credit was undoubtedly due Dr. Morton for introducing the discovery to the profession in such a way as to immediately claim their attention and insure their enthusiastic support. He saw in the facts so clearly established by Dr. Wells a broad avenue open to unlimited wealth and a world-wide reputation, and sought to utilize facts, already established, for his own benefit and the good of humanity, and in this he was not alone. The world is full of cases where the inventor or the originator of a great truth has not had the tact or the energy to make it available to the public. The body of the real discoverer of chloroform, an old army surgeon of the War of 1812, rests in an obscure grave in Sag Harbor, almost unknown. He never for a moment dreamed that he was one of the greatest benefactors of the human race that ever lived, nor would he have been had not the quick perception of Simpson, the great Edinburgh surgeon, seen in the White Whiskey, described in the paper of an unknown American chemist, a pain conquering power, the limits of whose influence no man could fathom. To the first the discovery was simply a toy, a plaything; to the other, with its twin sister, ether, an untold blessing to the world.

As Holmes so beautifully says: "The knife is searching for disease, the pulleys are dragging back dislocated limbs—Nature itself is working out the primal curse which devoted the tenderest of her creatures to the sharpest of her trials; but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deep furrows in the knotted brow of agony have been soothed away forever."

Anæsthesia and antiseptics are the crowning

glories of the profession in the last half century, and the names of those identified with their early history will ever be held in grateful remembrance

#### PSYCHO-THERAPEUTICS.

THE attention of the profession has within the past few years been more and more drawn to the study of psychology, and to its application to the cure of disease. Following in the track of German scientists, the laboratories which have been established in Tufts, Harvard, Yale and other colleges are creating a new interest in the study of the fundamental principle which underlies the law of psychic phenomena.

It has been so often demonstrated that there resides in man a psychic power which can be invoked under certain conditions for the relief of suffering, and to produce results which seem but little less than marvelous, that there is no reasonable doubt, not only of its existence, but its powerful work in the affairs of the world, and its untold influence on human thought and feeling. These phenomena are no longer relegated to the domain of superstition, but are attracting the attention of our ablest scientists, who, on unveiling that underlying principle which is back of all these phenomena and controlling them, to a certain extent analyze its component parts, measure its velocity and power, and even transmit to the sensitive plate the color of each individual part.

The fact of a dual mental organization is by no means new. It was held by Plato, by the old Greek philosophers, and by the early Christian fathers. Of modern writers who have accepted the dual theory, Prof. Wigar, Dr. Brown-Sequard, and Prof. Proctor are notable examples, and it is now so clearly defined as to form a cardinal principle in the philosophy of the new psychology.

First, we note the objective mind, which, in the language of Hudson, "takes cognizance of the objective world. Its media of observation are the five physical senses. It is his guide in his struggle with his natural environment. Its highest function is *reasoning*."

"The subjective mind takes cognizance of its environments by means independent of the physical senses. It perceives by intuition. It is the seat of the emotions and the store-house of the memory. It performs its highest functions when the objective senses are in abeyance. In a word, it is that intelligence which makes itself manifest in a hypnotic subject when he is in a state of somnambulism."

Looking upon the objective mind as a function of

the physical brain, reasoning and taking cognizance of the objective world through the five physical senses, we recognize in the subjective mind *the soul*, having a distinct entity, a mental organization of its own, and capable of sustaining an existence independent of the body, and constantly amenable to control by the power of suggestion, and having absolute control of the functions, conditions and sensations of the body.

Following out this line of reasoning, substantiated as it is by an overwhelming array of facts, we can see in the cures performed at Lourdes, and other holy shrines, in the mind cure, in Christian science, in mesmerism and suggestive hypnotism, various phases of psycho-therapeutics, true in part, but based upon the proposition of a dual mind, the objective and subjective, the subjective having absolute control of the functions, emotions and sensations of the body.

#### DYSPEPSIA AND CONSTIPATION.

THE more we study the action of the nervous system, the deeper the insight we obtain of the conditions so often present, as yet included under no nomenclature, the varied symptoms often rendering an intelligent diagnosis difficult. These nameless troubles, these complex and confusing symptoms, when included under the general term of neuroses, point to remedies directed specially to local or general nervous derangement, and insure a more consistent and successful treatment.

Dyspepsia in some of its forms, and constipation, have been the *bête noir* of our profession, often defying in diagnosis and treatment the skill of the physician.

We have been interested in an article read before the Canadian Medical Association by Adolphe De Martigny, M. D., on the use of electric baths in various forms of disease, which he claims should be classified as neuroses, specially including their action upon the digestive organs in certain difficult forms of dyspepsia, and upon chronic constipation.

The patient is placed in a bath, insulated, suspended by straps, and the temperature of the water being from 98° to 100°. In the treatment of dyspepsia we must act on the muscular and nervous system. One electrode is placed near the lower part of the neck, not touching the patient, and the other at the lower part of the spine, or at the feet, and directly in contact with them. To influence the muscular system of the stomach and intestines one electrode is placed on

the abdomen and the other at the same level under the patient but not touching the body. In constipation a rectal electrode is used, the other being placed on the lower part of the abdomen.

We quote two or three clinical cases illustrating the author's treatment. The first was a lady, sixty-eight years old, who had been dyspeptic for years. Her only food consisted of toast and chicken broth, with chicken or steak at dinner. The least departure from this diet was followed by headache, flatulence, constipation and pain. A few months' treatment brought about a complete cure.

In the second case, the patient had submitted to every imaginable treatment, with no good results. For eleven years she had been vomiting every day, no matter what she would eat. Her weight had been reduced from 215 pounds to 108 pounds when she commenced the baths. The improvement was marked from the first bath. In a few months she had entirely recovered. More than one prominent specialist in diseases of the stomach holds that seven-eighths of the cases of dyspepsia are due to disorders of the nervous system, producing lethargy of the membranes of the stomach and intestines. In these cases the author believes that electric baths invigorate the patient, regulate the action of the nervous system, and increase the strength of the muscular system of the stomach, bowels and abdominal walls.

#### GORRHOEA.

DR. OSCAR WUTER, of Berlin, uses itrol (silver citrate) in gonorrhœa with great success. It is used at first in the form of a weak solution, 1-8000, gradually increased in strength, four times a day. The itrol should be kept in a yellow bottle, and the treatment should be commenced early. He says the drug has an intense gonococcus-destroying action; it is readily borne by the urethral mucous membrane, and causes no noteworthy irritation or increase of the inflammation. Its action is deep-reaching, and without injury to the mucous membrane.

A PREVALENT notion that the Japan ivy and similar plants, which cling to the walls by rootlets, make the walls damp, is the reverse of the fact. Tons of water are evaporated daily from these leaves in the growing season, an amount which they would not draw from the earth. The rootlets suck water from the walls and cool them by their shade in the summer.

The action of the famous English ivy on ruins is a practical proof of the drying character. The mortar is so hard and dry that it is difficult to demolish the old walls.

THE first annual dinner and reunion of the Alumni of Ward's Island, now Metropolitan Hospital, will be celebrated November 11, 1896, with a dinner at the Hotel Savoy. From present indications a very large number of the alumni will be present. It is hoped these alumni dinners will be so far successful in the good fellowship produced by bringing together at the festive board those who have occupied positions on the medical staff of the hospital, that they will be anticipated from year to year with pleasure.

DR. DANA found in 108 cases of insanity a deformity of the uvala in fifty-three cases. From this he concludes the twist or bend implies an unequal development of nerve supply of the two sides, and the degenerate uvala is one that has an unequal and defective nerve supply. In more than half of all degenerates Azgos uvala does not act.

#### CORRESPONDENCE.

##### PRUNUS VIRGINIANA (CEVASUS VIRGINIANA).

To the Editors of the NEW YORK MEDICAL TIMES:

I am surprised that Dr. Laidlaw, in your last number, should say "Prunus virginiana is altogether neglected by Homœopathic text books."

In my "Therapeutics of New Remedies" I mention it under the name "Cevassus virginiana," which is the proper name. Again I mention its uses several times in my practice.

I am gratified that the doctor verifies its use in coughs "especially when lying down," but I have found *Drosera* to cure that kind of cough in most instances.

Chicago, Oct. 1, 1896.

E. M. HALE.

##### "DOCTORS OF OTHER DAYS": A CORRECTION.

To the Editors of the NEW YORK MEDICAL TIMES:

"Mea maxima culpa!" Acknowledging my fault, I hasten to correct an error in my article on "Doctors of Other Days," which was kindly pointed out to me by Dr. Geo. L. Freeman.

On account of the character and great attainments of Dr. James Jackson, as well as his association with the men and events of those olden days, I constantly confounded him with Dr. Charles T. Jackson, who suggested the use of ether, which Morton so daringly applied. Dr. Charles T. Jackson also made a telegraphic instrument.

I was led into error by that frequent fault of *knowing a thing too well*. Having been made familiar with the events related by the conversation of persons who lived at that time, I became entirely too confident of the accuracy of my knowledge of facts.

I have recognized grave errors and misleading statements in medical journals, but disliked to suggest their correction. Feeling grateful to those who take pains to rectify my errors, I shall in future try to call attention to mistakes worthy of notice.

JAMES ROBBIE WOOD.

## BIBLIOGRAPHICAL.

**ARCHIVES OF CLINICAL SKIAGRAPHY.** By Sidney Rowland, B. A., Camb., Late Scholar of Downing College, Cambridge, and Shuter Scholar of St. Bartholomew's Hospital; Special Commissioner to *British Medical Journal* for Investigation of the Applications of the New Photography to Medicine and Surgery. A series of collotype illustrations, with descriptive text, illustrating applications of the new photography to medicine and surgery. London: The Rebman Pub. Co. Philadelphia: W. B. Saunders. Monthly.

The object of this publication is to put on record in permanent form for practical use some of the more striking applications of the new photography adapted to the practice of medicine and surgery. Each part contains several photographs of interesting cases, with descriptive text. The work will be of interest not only to surgeons, but to all diagnosticians, and will find a permanent place in our serial literature, no doubt.

**THE MEDICAL AND SURGICAL USES OF ELECTRICITY.** By A. D. Rockwell, A.M., M.D., formerly Professor of Electro-Therapeutics in the New York Post-Graduate School and Hospital; Fellow of the New York Academy of Medicine; Member of the American Academy of Medicine; Member of the New York Neurological Society; formerly Electro-Therapeutist to the Woman's Hospital in the State of New York, etc. Illustrated with 200 engravings. New edition. New York: Wm. Wood & Co., 1896; pp. 612.

This work is practically the ninth edition of Beard & Rockwell's well-known "Treatise on the Medical and Surgical Uses of Electricity," but as the late Dr. Beard has had nothing to do with the issue since the second edition, it is proper that the responsibility should rest with Dr. Rockwell, who is the real author.

The book has been thoroughly revised and much of it re-written, the illustrations are new, and the whole text brought down to the present.

A chapter is devoted to the Röntgen or X-rays, and the subject of static electricity has been re-considered.

The work should be denominated classical and standard.

**A TEXT-BOOK OF HISTOLOGY, Descriptive and Practical, for the Use of Students.** By Arthur Clarkson, M. B., C. M., Edinburgh, formerly Demonstrator of Physiology in the Owen's College, Manchester; late Demonstrator of Physiology in the Yorkshire College, Leeds. With 174 original colored illustrations. Philadelphia: W. B. Saunders, 1896; pp. 554; octavo.

The purpose of the author has been to furnish the student with both a descriptive and a practical work on this subject, in one volume, and he has accomplished his task in a most satisfactory manner. In order to make the text accord with his space, the writer has avoided disputed points and omitted references almost entirely. The aim has been to give only the real knowledge at hand, and not cumber the mind of the student with non-essentials. The book should be commended.

**WATER AND WATER SUPPLIES.** By John C. Thresh, D. Sc. (London); M. B. (Victoria); D. P. H. (Cambridge); Medical Officer of Health to the Essex County Council; Lecturer on "Public Health," Kings College, London; Editor of the *Journal of State Medicine*; Hon. Sec. Incorporated Society Medical Officers of Health; Fellow of the Institute of Chemistry; Member of the Society of Public Analysts, etc. London: The Rebman Publishing Co., 1896. Philadelphia: W. B. Saunders; pp. 438; 12mo.

The main object of this little book is to furnish information respecting the supply of pure water, and it contains sufficient detail to enable intelligent consideration of the subject.

**A TREATISE ON SURGERY.** By American Authors. For students and practitioners of surgery and medicine. Edited by Roswell Park, A. M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, N. Y.; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; Ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. Volume I., General Surgery. With 356 engravings and 21 full-page plates in colors and monochrome. Lea Brothers & Co., Philadelphia and New York; 1896; pp. 800.

In preparing this new treatise on surgery, the editor assumed that the surest method of securing success in his undertaking was to obtain the collaboration of those who unite the qualifications of teachers with clinical experience, and to that end the names of some of the most distinguished surgeons in the country appear in the list of contributors. The advance in the science and art of which this book treats, has satisfied the editor that a departure from tradition in respect to the treatment of certain topics was advisable, and hence it will be found essentially new. As an instance, the distinction maintained between hyperæmia and inflammation (*i. e.* infection).

We also find discussed subjects which have not been included in works of this class, such as surgical pathology of the blood, etc.

Bacteriology receives the attention its importance demands, and nearly every page will be found impressed with its teachings.

All the subjects are treated from the advanced standpoint of the American surgeon of to-day.

This volume contains the more general subjects of surgical pathology, the general principles and theory of surgery and the surgery of the tissues and tissue systems, the particular applications of general surgery to the surgery of regions and organs being reserved for the second volume.

The illustrations, which are profuse, have been prepared in the main expressly for this work, and colored plates have been utilized whenever necessary to elucidate the text.

The work is both classical and practical, while the physical part is all that could be desired.

**A TEXT BOOK OF DISEASES OF THE NOSE AND THROAT.** By Francke Huntington Bosworth, A. B., Cantab., A. M., M.D., Professor of Diseases of the Throat in Bellevue Hospital Medical College, New York; Consulting Laryngologist to the Presbyterian and St. Vincent Hospitals, New York; Honorary Fellow of the British Otological, Laryngological and Rhinological Association; Corresponding Member of the Société Française D'Otologie et de Laryngologie; Fellow of the American Laryngological Association, the Academy of Medicine, New York; Member of the Medical Society of the State of New York, and of the Medical Society of the County of New York, etc. Illustrated with 186 engravings. New York: Wm. Wood & Co., 1896; pp. 814, octavo.

The book before us is a condensation of the author's larger work which was issued in two volumes, which has been considered too voluminous for students and general practitioners.

The text will be found sufficiently exhaustive for practical purposes by those for whom it is intended. The work is all that could be desired from a literary and scientific standpoint.

**MINOR SURGERY AND BANDAGING.** By Henry H. Wharton, M. D. Lea Brothers & Co.; 1896.

The third edition of this excellent work has been thoroughly revised, with the addition of numerous illustrations, containing the newest ideas and the most expert work. This volume will be most welcome, especially to physicians who have not had the opportunity to keep pace with the progress of the times.

**A MANUAL OF VENEREAL DISEASES.** By James R. Hayden, M.D., Chief of Venereal Clinic at the College of Physicians and Surgeons (Columbia University). New York; Professor of Genito-Urinary and Venereal Diseases in the Medical Department of the University of Vermont; Visiting Surgeon to the New York City Hospital. With forty-seven illustrations. Lea Bros. & Co., New York and Philadelphia, 1896; pp. 267; 8vo.

The author has attempted to give in the volume before us in a concise form a practical statement of what is known of the three venereal diseases, gonorrhoea, chancroid and syphilis, including their complications and sequelae. The book is really an epitome of Prof. R. W. Taylor's excellent work on this subject, and will be found a useful guide to students and practitioners.

**DISEASES OF THE EYE. A Hand-Book of Ophthalmic Practice, for Students and Practitioners.** By G. E. De Schweinitz, A. M., M. D., Professor of Ophthalmology in the Jefferson Medical College; Professor of Diseases of the Eye in the Philadelphia Polyclinic; Ophthalmologist to the Orthopaedic Hospital and Infirmary for Nervous Diseases. With 256 illustrations and two chromo-lithographic plates. Second edition, thoroughly revised. Philadelphia: W. B. Saunders, 1896; pp. 680; octavo. Cloth, \$4.

This excellent book has been most cordially received by the profession, and the present edition has not only received thorough revision, but much new matter has been added.

No better work can be found for the purposes intended, as it is practical, and the text is concisely and clearly stated. The physical part is in Mr. Saunders' best style.

**FOOD IN HEALTH AND DISEASE.** By I. Burney Yeo, M.D., F. R. C. P., Examiner in Medicine at the Royal College of Physicians; Professor of Clinical Therapeutics in Kings College, London, and Physician to Kings College Hospital. Author of "A Manual of Medical Treatment," etc. With illustrations. New and revised edition. Philadelphia: Lea Brothers & Co.; pp. 592; 12mo.

This little book, dealing with so important a subject as the nutrition of the human body, a subject which is being more and more appreciated by the profession, is an improvement over other editions, because more space is devoted to the diet in disease. The book is inexpensive, and should be in the hands of every student and practitioner as a ready hand-book, concise and practical.

**A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS.** By Roberts Bartholow, M. A., M. D., LL. D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia; Fellow of the College of Physicians, Member of the American Philosophical Society, Honorary Fellow of the Royal Medical Society of Edinburgh, Honorary Member of the Société Médico-Pratique de Paris, and of various National, State and County medical societies. Author of a "Treatise on the Practice of Medicine," of a "Treatise on Medical Electricity," of a "Manual of Hypodermic Medication," of the Russell and Jewett Prize Essays, and Prize Essays of the American Medical Association and of the Rhode Island Medical Society, etc. Ninth edition; revised and enlarged. New York: D. Appleton & Co., 1896; pp. 866; octavo.

This classical work, having reached its ninth edition, need be noticed only to announce a new and revised edition.

Forty-five pages have been added, and alterations are apparent at all points.

Suitable attention has been paid to the new synthetical remedies which organic chemistry has produced, according to the judgment of the author.

The high standing of the author as a teacher and practitioner is sufficient guarantee of his work, and we are glad to see that Prof. Bartholow has so far recovered his health as to be able to give us this revised work.

**PTOMAINS, LEUCOMAINS, TOXINES AND ANTITOXINES, OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE.** By Victor C. Vaughan, Ph. D., M. D., and Frederick G. Nory, Sc., M. D. Third edition. Lea, Brothers & Co.; 1896.

The subjects discussed in this volume are comparatively new, and yet their investigation has cast so much light upon the laws and prevention of disease as to render a third edition of this remarkable work a necessity.

**A MANUAL OF PHARMACOLOGY AND THERAPEUTICS.** By William Murrell, M.D., F. R. C. P., Physician to and Lecturer on Pharmacology and Therapeutics at the Westminster Hospital; Late Examiner in Materia Medica in the University of Edinburgh, and Examiner in Materia Medica and Pharmacy to the Conjoint Board of the Royal College of Surgeons of England, and the Royal College of Physicians of London. Revised by Frederick A. Castle, M.D., Member of the Committee for Revision and Publication of the Pharmacopœia of the United States of America; late Lecturer on Pharmacology at Bellevue Hospital Medical College; Physician to the Presbyterian Hospital; Editor of "New Remedies," etc. New York: William Wood & Co., 1896; pp. 516; octavo.

The book before us is intended as a student's text book, is an abstract of lectures delivered at the Westminster Hospital, and is adapted primarily to the requirements of students preparing for the examinations.

The reviser has adapted the text to American readers, and has added articles on climate and on mineral waters.

**A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS.** By John H. Musser, M. D., of the University of Pennsylvania. Second edition; Lea Brothers: 1896.

Successful treatment is founded in a great measure upon actual knowledge of the real condition of the patient. In other words, as the author correctly states, the physician should never forget that his patient is a unit comprising closely connecting organs, and that the response to treatment will be satisfactory only in proportion to the condition of the entire system. In all cases it is important to determine what is organic and what functional, and the condition of all the organs. The author has been successful in presenting the subject of diagnosis in the clear language and with the abundant illustration to secure the very best possible results at the bedside. A careful study of this book will lead to a closer investigation and a more accurate knowledge of the real condition of the patient, and consequently better results in treatment.

**PRACTICAL POINTS IN NURSING.** By Emily A. M. Storey. Illustrated with seventy-three engravings and nine colored and half-tone plates. Philadelphia: W. B. Saunders.

The division of the text includes:

- I. The nurse; her responsibilities, qualifications and equipment.
- II. The sick room; its selection, preparation and management.
- III. The patient; duties of the nurse in medical, surgical, obstetric and gynaecological cases.
- IV. Nursing in accidents and emergencies.
- V. Nursing in special medical cases.
- VI. Nursing of the new born and sick children.
- VII. Physiology and descriptive anatomy.

As a text-book for the training school and as a companion for the nurse in hospital, and especially in private nursing, we have seen nothing better. The appendix is of special value in its rules for feeding the sick, recipes for invalid food and beverages, and a glossary of medical terms and nursing treatment.

**VEST POCKET MEDICAL DICTIONARY.** Embracing Those Terms Which are Commonly Found in the Medical Literature of the Day, but Excluding the Names of Drugs and Many Special Anatomical Terms. By Albert H. Buck, M. D. New York: Wm. Ward & Co.

This is literally a vest pocket dictionary, but edited with such excellent judgment that it includes nearly all the current words, new and old.

## SOCIETY REPORTS.

### FRENCH MEDICAL SOCIETIES.

#### THIRD FRENCH CONGRESS OF MEDICINE

*Serumtherapy of Variola.*—M. Bédère completed the communication which he made last January to the Medical Society of the Hospitals upon the immunizing, preventive and curative action of the serum of inoculation, an action demonstrated by his experimental researches in conjunction with MM. Chambon and Si-Yres Ménard, and upon application of this serum to the treatment of variola. He briefly resumed his observations, numbering nineteen, and made at the hospitals of Paris and Marseilles. In adults, the total quantity of the injected serum generally varied between a litre to a litre and a half; twice it exceeded this dose and reached the figure of 1,600 cubic centimetres. The quantity received by young children varied from an eighth to half a litre, but the dose was stronger relatively to their weight. Two children were cured, one of twenty-one months, the other only twenty-six days, after receiving the twentieth of their weight of serum; a third, aged three months was cured after the administration of the twenty-fifth of its weight of serum. As respects adults, it is often very difficult to inject more than the fiftieth of their weight. In some emaciated subjects M. Bédère reached the thirty-third of their weight, but never exceeded this dose. These large quantities of serum, introduced into the subcutaneous cellular tissue, were rapidly absorbed, or more properly digested, without causing any other accident than the appearance, in certain cases, and from six to ten days after the injection, of a morbilliform eruption, sometimes accompanied with urticarial elevations, usually pale, rarely generalized, almost invariably apyretic, without general troubles, and always of short duration. The serum of the inoculated heifer, and also of the non-inoculated, seems to be tolerated better by the human organism than that of the horse. As regards the action of the serum of the inoculated heifer upon evolution of variola, M. Bédère awaits the collection of a larger number of observations, and the increase of the immunizing power of the serum, contenting himself for the present with showing that its application to the treatment of variola constitutes a rational and harmless medication.

*The Transmission of Human Cancer to the Animal; Serumtherapy of Cancer.*—M. Louis Dubois has investigated the production in an animal of a local reaction sufficient to allow him to suppose that the organism of the animal has been affected by the inoculated cancerous elements. For these inoculations he used cancerous fragments, and injected them into the cellular tissue. By this method he obtained many tumors, the largest of which weighed 570 grains. Three cases were treated by serum, one a non-ulcerated cancer of the breast, in which a cure, nearly complete, was obtained after fifteen days' treatment. The tumor was atrophied, and transformed into a small fibrous nodule. In the second case, an epithelioma of the forehead diminished and disappeared in thirty-five days. In these two cases from 2 to 5 c.c. of the serum were injected every third day in the neighborhood of the tumor, and also the injection into the tumor and its periphery of a few drops of slightly iodized alcohol. The third case, an ulcerated and malignant epithelioma of the upper lip, after twenty-three days showed only the arrest of its progress, but no tendency to cure. The serum seems to produce cure by a fibrous

transformation. Its action is rendered more certain by its prompt employment, and presents no dangers except where there are extensive lesions. M. Bard did not believe in the reality of the cancer so obtained. He considered the tumors as simply inflammatory, and not genuine neoplasms, and hence the experiments were not conclusive.

*Serotherapy and Diphtheria at Marseilles.*—M. D'Astros, in charge of a laboratory for investigations of diphtheria, has made, from January 1, 1895, to July 1, 1896, 1,064 bacteriological examinations, of which the results are the following: Diphtheretic affections, pure or associated, of pure diphtheria, 399; diphtheria, with streptococcus, 89; with staphylococcus, 61; with coccus, 106; with different bacilli, 13; affections non-diphtheritic, 396. The mortality of the cases of diphtheria treated by the serum was 17.7 per cent. In 1895 the mortality in angina, without croup, was 13.8 per cent; croup, with or without angina, 36.8 per cent., and in the first twenty-four hours the deaths were respectively from 11.4 per cent. to 28.7 per cent.

*Polyneuritis Grafted Upon a Nervous Diathesis.*—Prof. Bernheim, of Nancy: The number of peripheral neurites has increased remarkably within a few years, doubtless because a more intelligent observation of them has caused them to be more thoroughly recognized. As we know, the majority of them are of toxic or infectious origin. On the one hand, lead, mercury, arsenic, alcohol, oxide of carbon, and on the other, diphtheria, the pyrexia, typhoid fever, pneumonia, influenza, syphilis, etc., by the toxins of their microbes. This year I have observed two cases of polyneuritis, with paralysis of the four limbs and polyneuritic psychosis, one developed during pregnancy, the other consecutive upon erysipelas. I have recently seen a polyneuropathy of the four limbs, with total paralysis, in a young man of vigorous constitution, that supervened four days after the beginning of a seemingly mild influenza. But if mineral, vegetable or microbic poisoning seem to play a preponderating role in the genesis of peripheral polyneuritis, we should not lose sight of other etiological factors of this disease. Facts show that nervous emotions, neurasthenia, local hysteria, may engender various peripheral neurites. Observation: A young woman of twenty-nine years, nervous, impressionable, without any previous hysteria, entered my service on November 25, 1895, with paraplegia, muscular atrophy, paralytic club-foot—varus equinus—plantar grip of the toes, impossibility of replacing the right foot, slight mobility of the left, movements of the leg and thigh preserved, absence of electro-muscular contractility. The origin of the paralysis as follows: In July her daughter was the victim of violence. The patient was impressionable; no other special peculiarity. Two months after she was summoned to attend the court; there she became terrified and indignant on hearing the lawyer on the side of the accused. She subsequently became nervously exhausted, excitable and irritable, and after the lapse of fifteen days, she was taken with vomiting, chills, pains in the limbs, contraction of the right leg in the thigh, of the toes of the feet and the fingers on the hands. Vomiting continued for fifteen days, arrest of the menses for six months. The knee was restored to its proper position and kept so by splints, pains continued for two months, flexion of fingers relaxed, and all contraction disappeared. Peripheral paralysis persisted in legs and feet with abolition of reflexes. Regeneration began slowly; the paralytic varus equinus continued. Observation: A young girl of twenty-one years, always nervous, impatient, has had several attacks of hysteria. She entered hospital for nervous paraplegia; has not walked for five months; legs bend under her; violent pains in toes, calves, and weakness of limbs. Determining cause: She loved a young man whom her parents opposed; she became depressed, gloomy, melancholic, with general malaise, insomnia, profuse sweating, anorexia, cephalalgia, nocturnal agitation. This lasted for two months, when paralysis of the legs began, with pains in limbs. Believing this to be a case of hysterical paralysis, treatment by suggestion was tried, with the effect of rapidly removing the pains and enabling the patient to walk,

but the deformity of the right leg and persistence of club foot—*varus equinus*—continued, and could not be corrected. There was also a notable atrophy of the muscles of the calf, particularly the right, with slight distortion of the left foot. The suggestion relieved the hysterical functional condition, but the peripheral progress continued to be rebellious to it. These observations present analogous etiological conditions. During full health a moral emotion supervenes, vivid, and followed by innervation and excessive excitability, lasting from fifteen days to several months, with cephalalgia, vomiting, suppression of the menses, etc. At the end of a few weeks polyneuritis appeared. It is incontestable that in these cases a violent moral emotion, by disturbing the nervous system, caused the neuritis. Mazne concludes that they result from a dynamic commotion of the nerves, which have received a moral shock. The observations seem to show that such is the mechanism of these conditions. In the cases the polyneuritis was preceded for many weeks by general symptoms, depression, malaise, vomiting, chills, etc.; that is to say, there was probably a general infection, which preceded the localization upon the peripheral nerves. It seems legitimate to conclude that the nervous diathesis created a physical condition favorable to the development of a virulence of the otherwise harmless microbes of the organism, and polyneuritis resulted, an infectious polyneuritis, grafted upon a nervous or hysterical diathesis and created by it. "I have seen," said Prof. Bernheim, "in two instances a neurasthenia, probably infectious, complicated with diplopia, due to muscular neuritis of the eye, which continued for many months and was cured at the same time with the neurasthenia." We may then say that a nervous diathesis causes not only neurasthenia and hysteria, but also organic diseases of the nervous system.

*Trophic Troubles of the Teeth, of Hysterical Origin.*—M. Paul Sollier, of Paris: Hysteria, which can produce trophic troubles in the limbs, can also provoke them in the teeth. There is an atrophy of the teeth which begins by an erosion of the enamel, round in form, decreasing from the periphery to the center, where the dentine is exposed. When the enamel disappears the dentine, without dry or moist caries, becomes very pliable, disintegrated, eroded and gradually absorbed. The nerves are exposed and become very painful on slightest contact. The neck of the tooth is not attacked and the root still more rarely; it is only the body that becomes changed and disintegrated. This trophic trouble was observed in two cases in which there was an old hysterical anorexia with vomiting, which had lasted a long time, and had induced a generally unhealthy condition. The evolution was very rapid, and in a few months all the teeth were reduced to painful stumps which it was necessary to extract. The alveoli were healthy, but as soon as the enamel became affected the teeth decayed. Nothing would prevent the course of this trophic trouble, not even the amelioration nor the cure of the other hysterical phenomena. This was a genuine trophic trouble, for in the two cases the wisdom teeth seemed to be bare of enamel at certain points, which doubtless were not developed. There is only one possible intervention, and necessitated by the constant pain, which aggravates the nervous condition and the difficulty of nourishing the patient, who stands so much in need of alimentation, and that is the extraction of all the teeth and the application of an artificial apparatus.

*Hematemesis in the Neurasthenic.*—Dr. E. Ausset, of Lille: I report to this Congress a case analogous to those already presented in 1895, by M. Mesnard, of Bordeaux, to the Biological Society. It was that of a man of thirty-seven years, who had a first attack of hematemesis at the age of twenty-five years, while studying hard for an examination. In the month of March, 1896, there was a second vomiting of blood during a violent quarrel. The vomited blood was very red, but mixed with water and mucus, and uncoagulated at the end of two hours. It was syrupy and adhered slightly to the bottom of the vessel, and the total quantity of the liquid was about 200 grammes. Examination of all the organs presented nothing abnormal, except a slight dilatation of the stomach; reflexes normal; violent and frequent headache and scalp

sensitive; frequent insomnia; nervous temperament and the least opposition frets him; memory intact. He is very anxious about his condition, and when interrogated, especially in relation to his digestive functions, there is a remarkable prolixity, and one sees that there is the sensitive point. He believes that he has a grave affection of the stomach, and is constantly concerned about the condition of his tongue. Besides the slight dilatation there is a sense of weight in the stomach, cramps after eating, eructation, no vomiting. Gastric chemistry shows the existence of a slight degree of hypochlorhydria, and that he has a *nervo-motor dyspepsia* in a mild form. Pulmonary tuberculosis, round ulcer and cancer being out of the question, it can only be a nervous hematemesis, not hysterical, since there is no sign of profound neurosis, but rather neurasthenic, as the majority of the classic indications of neurasthenia are observed.

*Epileptiform Attacks and Uterine Fibroma.*—M. Froelich reported a case in which there were typical crises of epilepsy, with biting of the tongue and involuntary evacuation of the urine in a person of thirty years, at the same time with very abundant hemorrhage, due to uterine fibroma. For six years there was a parallel development of the fibroma and the hemorrhage and the number of epileptic attacks, in spite of the most active treatment with bromides. At forty years, the patient having reached the last degree of physical and moral cachexia, she was operated upon by abdominal hysterectomy, and the tumor weighed sixteen pounds. The pulse remained at forty-eight for two days after the operation, sequelæ normal. After the operation the attacks were much more frequent than before, thanks to a prediction made to the patient, by which she was greatly disturbed. Since six months she has often succeeded in preventing them by the force of volition. It is hoped that they will disappear finally and completely as soon as the general health is improved. They are attributed—first, to the development of the tumor, and the resulting anæmia; second, to the gastric irritation produced by the ingestion of the large quantity of the bromide; third, to the nervous impressions produced upon the patient by these three causes. The first factor was removed by the operation and the other two ceased from the same cause. The progressive improvement seems to give reason for this interpretation. M. Bernheim has observed analogous facts, in which the epileptiform attacks were associated with inflammation of the genital organs. It is not essential that there should be albuminuria.

M. Vantrín: Sclero-cystic degeneration of the ovaries produces epileptic attacks. After the removal of the ovaries, or an operation upon the tubes, these accidents subside. They are the reflexes springing from the inflammation of the annexæ. There are nervous attacks, not always epileptiform; the removal of the ovaries is not always sufficient to destroy them, for we sometimes see mania or imbecility ensue. M. Crocq: An impression of peripheral origin may produce reactions of central origin. This case is an example. An inflammation may suffice; analogous attacks are seen to follow gastric affections. The experiments of Brown-Sequard, of cutting the sciatic and rendering rabbits epileptic, prove this, and it can only be considered as a reflex.

*Anatomo-Pathological Contribution of the Medulla in Typhoid Fever.*—M. Revinot, chief authority upon pathological anatomy of Nancy, says: I have examined ten medullæ of typhoid fever and their nervous branches, and have constantly found lesions affecting, first: The myelino, which sometimes disappears from the nerve tube, sometimes is reduced to a ring, to a crescent, to granulations situated between the neuroglia and the sheath of Schwann. Second: Affecting the axis-cylinder, which is often displaced and deformed. It is frequently swollen and even dissociated. Third: Affecting the nerve cells, their substance and prolongations. The neuroglia, conjunctive tissue and vessels present no lesions. Typhoid fever produces constant alterations of the medulla and its branches, the degree of which varies according to the case.

*Treatment of Chlorosis by Quinine.*—MM. Spillmann and G. Etienne: The morbid phenomena that often pre-

cede menstruation may be considered as the result of a poisoning which disappears when the menses are established. The frequency of menstrual troubles in chlorosis is well known. The ovarian gland may be considered. First: As a gland having an external secretion, viz., the ovule. Second, As a gland charged with eliminating by the menstrual blood the excess of organic toxins. Third: Finally, as a gland provided with an internal secretion like the testicles, which plays an important role in general nutrition. If chlorosis is a disease of the ovaries, these three functions are modified or abolished, and with the suppression of menstruation there appears this special infection, chlorosis. *Per contra*, a general unhealthy condition intervenes in its turn, preventing the cure of the ovarian gland. By giving to the organism, in some way, the product of internal ovarian secretion, perhaps the infection may be arrested, and by acting upon the general organism produce the cure of the local ovarian affection. Three products were employed, viz., fresh ovaries of the sheep, dried ovarian powder and ovarian juice, prepared by the method of Brown-Sequard-De Arsonval. Experiments were made on six chlorotics, and all experienced great pain at first, localized particularly in the lower abdominal region, with headache and wandering muscular pains. In two of the patients the temperature ran up to 37.8° and 38°; pulse, 75 to 100. In three of them the results were clearly favorable, the general condition improved rapidly, pallor diminished, number of white globules increased, and strength returned. The menses, suppressed for three or four months, reappeared fifteen days after the beginning of the treatment in one patient, and at the end of three months in another. In the treatment of chlorosis, ovarine, by promoting the elimination of the toxins, and by introducing an anti-toxic principle into the organism, seems to have a favorable action upon the general condition, upon the augmentation of the number of globules, and upon the re-establishment of menstruation.

*Treatment of Rheumatism by Local Applications of the Salicylate of Methyl.*—MM. Lannois and Linossier, of Lyons, recalled the fact that they were the first to propose the local application of the salicylate of methyl, and to point out the value of this treatment in articular rheumatism. In their first communication they had especially in view the theory relative to the absorption by the skin of medicines that possess the power of emitting vapors at a low temperature. The salicylate of methyl has been employed by them clinically in different cases of rheumatism—acute, subacute, deforming; blennorrhagic—and in other cases of peripheral pain—neuralgia, neuritis of the tuberculous, etc. In all these cases it has a manifest action upon pain, which it causes to disappear for a longer or shorter period, according to the case, and effects the cure in a few days. It should be employed in those cases in which, for some reason or other, it is desirable to obtain a local action, and when the usual remedies for rheumatism are not tolerated by the stomach. It acts well in acute articular rheumatism, but it should not be employed, because of the difficulties of its application to very painful articulations, except when internal medication has failed. On the contrary, in sub-acute and chronic forms, and in the painful attacks which occur now and then in the different varieties of deforming rheumatism, the local absorption of the salicylate of methyl acts as well as by the buccal absorption of salicylated remedies, and is often superior to it.

*The Diagnostic Value of Lumbar Puncture; Comparative Examination, from a Bacteriologic and Chemical Point of View, of the Cephalo-Rachidian Fluid.*—MM. Denigues and Sabbazes, of Bordeaux: In fourteen cases the puncture was negative, in eight cases positive. The positive cases embraced six acute tubercular meningitides, one case of epilepsy, one of hydrophobia. In the cases of meningitis the fluid was drawn in six out of seven. In two cases of chronic meningitis it did not flow; one was verified by autopsy, the other by the reaction of tuberculin. The flow is always intermittent, generally rapid, exceptionally slow, as in Observation IX. The quantity extracted varied from 1, 11, 14, 15, 32, 40, 100, 102 c.c. Immediately after the puncture, in a case of tubercular men-

ingitis, in which the extracted fluid was 40 c.c., there was observed a thermic ascension of a degree, 39° instead of 38°, an increase in the number of respiratory movements—64 to 76 per minute, Cheyne-Stokes—and a slight acceleration of the pulse. The fluid was always colored, and sometimes sanguinolent—observation 3 and 4 in meningitis, may in other cases, hydrophobia, for example—pass through the canula clear as crystal. Bacteriologic examination of the deposit was always made at once, after centrifugation. Three times Koch's bacilli were extremely numerous, intra and extra-cellular. In the deposit were found, besides some hemates, mono and polynuclear leucocytes, and even giant cells. In one case the search for bacilli and the inoculation were negative, although sections of the tubercular cerebral meninges had shown tubercular bacilli. An injection under the dura mater of a dog, of the cephalo-rachidian fluid, taken by lumbar puncture during life from a case of human hydrophobia, was followed by furious hydrophobia two months after the inoculation. A rabbit was inoculated with a preparation made from the bulb of this animal, and hydrophobic paralysis was produced fifteen days after the inoculation. It was interesting to submit to chemical analysis, comparative and complete, the cephalo rachidian fluid. Five cases of tubercular meningitis and one of human hydrophobia served for this examination.

In cases of acute tubercular meningitis the centrifugal cephalo-rachidian liquid contains many organic principles—2.33 to 2.55 gr. per litre. In one case these principles were decomposed into serine, 2.10 gr.; peptones 0 gr. 10, urea, 0 gr. 35. Chemical analysis of the cephalo-rachidian fluid of hydrophobia differs very notably from that observed in tubercular meningitis. Its density is less, there is not more than 0 gr. 20 of serine per litre. On the contrary, the reduced substances correspond to 0 gr. 72 of glucose. The chlorates are more abundant, 6 gr. 90, instead of 5 gr.; also carbonates, phosphates and sulphates. By pursuing these researches perhaps an analytical formula may be found of the cephalo-rachidian fluid corresponding to each type of meningo-cerebro-spinal infection.

*Treatment of Arthritic Diabetes by the Dosage of Alimentation.*—M. E. Maurel: Clinical observation and experimental researches having led Dr. Maurel to consider excess of alimentation as the most important cause of arthritic diabetes, he desired to submit this opinion to clinical proof. If, in effect, this hypothesis be exact, he ought to be able to modify, and perhaps ameliorate, the diabetes by restoring the alimentation to a normal condition without being obliged to restrict the patient to an exclusive regimen. The results have exceeded his expectations, and Dr. Maurel cites sixteen cases of diabetes treated by this method, ten of which were cured and six were greatly improved. Of these cases fourteen were his own and two were reported to him by Dr. Baillac, Chief of Medical Clinic at Toulouse. He adds that by the term improvement or amelioration he does not mean only the diminution or the disappearance of the sugar, but also of all the other symptoms of diabetes. Besides, Dr. Maurel has applied these ideas to other forms of arthritism, and with the same result. During six years he has treated in this way 160 cases of arthritism, and all were cured, or notably ameliorated. The forms he has most frequently relieved are gravel, obesity, diabetes, arthritic albuminuria, seborrhoea and the mucous hyper-secretions of gout. Dr. Maurel bases the regulation of his system of alimentation upon the facts which he made known to the Congress for the Advancement of Science of Bordeaux in 1895, and which he rapidly recalled. The importance of these ideas does not consist in their application to the treatment of diabetes alone, but to numerous other arthritic forms of disease, and to the light they may be able to throw upon the obscure pathogenesis of this group of affections.

*Upon Pleuritic Auscultation.*—M. Hervouet: It is generally supposed that the sound of the pleuritic souffle and the egophony are produced by the presence of an effusion into the pleura, and it is explained by the change in the consistence of the compressed pulmonary tissue. If that were truly so, the souffle would be constant in pleurisy,

which is not the fact. Many cases are completely evolved without being accompanied by this stethoscopic phenomenon, whatever the quantity of the effused fluid may be. Moreover, the presence of the fluid, by forcing back the lung, is incapable of really modifying its consistence. It must then be admitted that when there is a bruit de soufflé—bellows sound—it is produced by a subjacent and independent pulmonary alteration. Tuberculosis, pneumonia, different broncho-pneumonia thus occasion a tubar soufflé which assumes a peculiar quality of sound because it is transmitted to the ear by a fluid medium. The same reasoning applies to the egophony, which is as inconstant as the soufflé. Conclusion: The pleuritic soufflé and egophony do not inform us as to the condition of the pleura, but to that of the lung.

*Addison's Disease, With Absence of the Supra-Renal Capsules.*—M. A. Rispal, of Toulouse: The observations of Addison's disease, with the absence of the supra-renal capsules, as proved by autopsy, are regarded as entirely exceptional. Despite our researches, we have been able to collect only two cases of this kind, one belonging to Fletcher, the other to Ken-Spencer. It has also been our good fortune to observe a third case, of which we here give a complete anatomical and clinical report. It occurred in a young man of twenty-four years, who, without any pathological antecedent or any known cause, was attacked by Addison's disease—cutaneous and mucous melanoderma—pain, emaciation, progressive cachexia and asthenia, and gastro-intestinal troubles, terminating in death at the end of ten months. Contrary to our expectation the autopsy revealed not only the absence of every tubercular visceral lesion, but especially the non-existence of the two supra-renal capsules, perfect integrity of the bronchiæ and of the ganglia of the abdominal sympathetic nervous system. We do not propose to make any pathogenic deduction from a single fact, especially one so exceptional. We desire only to draw attention to a new observation of Addison's disease, with the congenital absence of the supra-renal capsules.

*Diseases Whose Pathogenic Agent is Known.*—1. Charbon: A. Behring has the merit of having demonstrated the bactericidal power of the blood of the rat. Orgata discovered the same of the frog. Metchnikoff and Roux reviewed the experiments of Behring, and concluded from their own experiments that the serum of the rat exercises a direct bactericidal action. Sclaro and Marchoux made experiments with the serum of inoculated animals. Paue and Travaux have reviewed the same, but the results obtained are as yet not encouraging.

2. Cholera: In 1892 Lazarus proved that the blood of patients cured of cholera had immunizing properties. Pfeiffer and Isaacs succeeded in obtaining very efficacious serums, but only against the peritonitis that the microbe of cholera sometimes causes. Ransom, instead of immunizing his animals with cultures of the vibrios, as Pfeiffer and Isaacs did, used toxines. His experimental results were very favorable, and tend to induce the belief that clinical researches will give the same results.

3. Coli bacillosus: The bacterium coli, which causes so many infections, seems as though it may be rendered impotent by appropriate serums, if we may credit the experiments of Demel and Orlandi, Salvati and Gaetano, Albarran and Mosny. From the analogies of the coli-bacillus and the bacillus of Eberth, Sanarelli obtained a reciprocal action of the true bacilli. From a serotherapeutic point of view, Loeffler and Abel have proved that if the serums of coli-bacillosus act upon typhoid infections and reciprocally, each kind has an action more marked upon the special microbe from which it is derived.

4. Diphtheria: Fraenkel submitted cultures of the microbe of this disease to a temperature of 90° to 100°, but the results were not encouraging. It is well-known how Behring found the means of immunizing animals, and recognized the therapeutic value of the serum. Hensch, who published in 1892 the first statistics of the results obtained by this process, was not satisfactory. Roux, Martin and Chailion, after perfecting the methods of Behring, published at the Congress of Budapest, in 1894, the first statistics with very favorable results, and based upon a great number of cases. Indiscriminate use of anti-diphtheritic serum is

not advisable. In doubtful cases clinical signs should be considered, and a bacteriological examination should always precede the injection of the serum; it is always useful and aids in making the prognosis. In effect, it is established that in cases of diphtheria with microbic association, the serum acts less actively. The analogy of the bacillus, which, according to Belfanti and Della Vedora, causes ozena, with that of diphtheria, has induced bacteriologists to try the cure of this disease by injections of anti-diphtheritic serum, but the results were doubtful.

5. Disease of pneumococcal origin has been made the subject of the researches of Foa, Klemperer, Roger, Charin, etc. In a case of acute meningitis, Righi obtained a cure in eight days, and though an isolated case, is encouraging. The proteo bacillosus of Nittis and the pyocyanobacillosus—Richet, Hericourt, Behring, Bouchard—while not holding a prominent place in human pathology, have given interesting experiences in the laboratory.

6. Staphylococcy has also afforded serotherapeutic interest to Hericourt and Richet, Rodet and Courmont, Viqueret, Rose, etc., but not conclusive.

7. Streptococcy yields more satisfactory results. Immunization of animals was made in three forms: 1. Vaccination with living cultures—Lingelsheim—attenuated by heat or by the addition of the tri-chloride of iodine. 2. By sterilized cultures, a process difficult of employment, because they contain two kinds of substances, some of them diminishing, others augmenting the resistance. 3. By mixed processes, which gave good results to Mironoff. Roger, in making his serum, immunized his animals by injection of streptococcal cultures sterilized by heat and reduced to one-sixth of their volume. Vinoy used filtered cultures, Marmorek living cultures of the streptococcus of excessive virulence, one hundred milliardieme of a centimetre sufficing to kill a rabbit. The first applications to man were made by Gramakowsky. Since then Roger and Marmorek have made anti-streptococcal serotherapy common. Chantemesse published treatment of erysipelas by the serum of Marmorek, but it was disputed by Bolognesi. Obstetricians have obtained unexpected cures of puerperal fever. But there will always be partial checks to streptococcal infections because of the frequent microbic associations that accompany them, though Parascandolo succeeded in obtaining a therapeutic serum from many associated microbes.

8. Tetanus: Behring and Kitasato discovered the antitoxic serum of tetanus. It is preventive and harmless, and can be employed by injection—Roux, Vaillard and Nocard.

9. Tuberculosis: Richet and Hericourt made the first applications of serotherapy to tuberculosis by transfusion of the blood of the dog, but this method, like many others, was abandoned. The trials of immunization of animals for tuberculosis were more difficult than for other diseases, thus impeding effective results. Koch still holds to immunization by tuberculin. The researches are based upon three groups of methods for obtaining the immunization of animals: 1st. The employment of living cultures. 2d. That of sterilized cultures. 3d. Mixed methods. Maragliano observed that tuberculous cultures contained two kinds of toxic substances, some which are of Koch's lymph, coming from the bacilli themselves, others consisting of toxalbumins that may be separated from the cultures by filtration. These last principles have an action absolutely contrary to that of Koch's lymph. Maragliano succeeded in obtaining his serum by injecting in progressive doses three parts of the first substances into one of the second, and at the end of six months he obtained his curative serum. This serum, in the doses indicated by him, is not dangerous, and appears to be of certain efficacy.

11. Typhoid fever: Chautemesse, Widai, Klemperer and Levy have made investigations of the serotherapy of dothineuteritis, but it would be rash to draw any positive conclusions because of the paucity of the facts. Infectious diseases, whose pathogenic agent is unknown—among these are some transmissible to animals. In hydrophobia Babes has demonstrated that the serum of animals that have been strongly immunized by the method of Pasteur is very useful, especially in urgent cases. Numerous ex-

periments have been made with vaccine and variolar virus. Beclerc, Chambou and Menard have established the therapeutic value of the serum of the inoculated heifer, but the applications of serotherapy to the variolous by Beclerc are not conclusive. Infectious diseases which are not transmissible to animals, viz., whooping cough, scarlatina, exanthematous typhus, rheumatism, have been the subjects of serotherapy, but we yet await results. As respects syphilis, this treatment is clearly inferior to the old treatment. In cancer, injection of the cancerous liquid in animals has given no results. The employment of a streptococcic serum, recommended by Emmerich and Scholl, should be abandoned. Delbet has recently isolated a special microbe of lymphadenoma, and has undertaken therapeutic experiments upon this subject.

*Diseases Peculiar to Animals.*—Serotherapeutic researches are also being actively made in veterinary medicine. Deutschmann has investigated serotherapy in symptomatic charbon; Silberschmidt, Metchnikoff, Lorenz, have studied in swine plague, hog cholera, pneumo-enteritis; Gamaleia, Behring and Nissen, in aviary septicæmia; Duclert and Cadiot in diseases of dogs and other animals, the pathogenic agent of which is unknown.

*Serotherapy in Poisons.*—This method has not only given results in poisoning by microbic toxins. Erlich applied it successfully against vegetable toxalbumens, and succeeded in destroying the action of abrine and ricine. The experiments of Roger upon strychnine and nicotine, of Calmette upon ouabaine and strychnine gave negative results. Fubini obtained success upon the salts of morphine, and finally Phisalix and Bertrand procured anti-venomous serums against the bite of serpents. They have already been used successfully in man at Saigon by Lepinay.

*Accidents Due to Serotherapy.*—These consist of cutaneous manifestations. Among them abscesses are observed from streptococcic serum taken from animals immunized by living cultures. The exanthemata are not rare. They consist of polymorphous erythemata, scarlatiniform rubelliform or urticaria. Forms of arthropathy are marked by œdema of the feet and hands, among the general troubles. Variot insists upon fever. Modifications of the urine under the influence of serum are very important. Besides polyuria, the decrease of the chlorides, increase of urea and the phosphates which are observed after all the injections of the serum, albumin, hemorrhages and nephritis also occur. Some attribute these accidents to a secondary infection; others pretend that the serum reveals a latent or old affection of the kidneys. Generally speaking, these post-serotherapeutic accidents are not serious, and generalized hemorrhages, due to a modification of the blood, may also be observed. Zagari and Calabrer have noted a diminution of hematine and of its richness in hæmoglobine. Dysenteriform diarrhœa, adenopathies, swelling of the spleen and cardiac troubles are sometimes seen. But these accidents are exceptional and do not lessen the value of the method. Instead of being produced by the influence of the antitoxine they result from the serum itself. Sevestre attribute them to secondary streptococcic infection; many incline to impute them to the albuminoid matter of the serum.

*Mode of Action of Therapeutic Serum.*—It is difficult to give an explanation of the mode of action of the serums. For a long time the bactericidal properties of the serum of the blood were not known. It has been incontestably proved that these properties increase in inoculated animals. Moreover, the serums modify the morphology of the microbes, and have upon them a curious action which consists in agglomerating them, and compelling them to become agglutinated by means, perhaps, of a special hypothetical substance, which Gruber calls glabrine and glabificine. This substance modifies the microbe, and renders it permeable to alexines and to non-specific bactericidal substances which produce lesions of the bacterial protoplasm. Heating to 70° causes these properties of the serum to disappear. Pfeiffer explains the destruction of the rod bacilli injected into the peritoneum of inoculated guinea pigs by the bactericidal action of the products secreted by the cells of

the serous membrane. Metchnikoff does not deny the phenomenon observed by Pfeiffer, but attributes it to the action of the principles that have escaped from dead leucocytes. Be that as it may, the serum has a manifest action upon the functions of the microbe, whose virulence it attenuates. Not only so, but when the humors of the blood have produced a sufficient modification of the microbe, the leucocytes intervene and phagocytosis results from the stimulation of the phagocytes by the inoculated serum. The antitoxine property of the serum is still more difficult of explanation. Behring considers to antitoxine as a simple neutralizant of the toxine, as for example, a base neutralizing an acid. But it is demonstrated—Buchner—that this phenomenon is not real, that the antitoxine does not act upon the toxine, but rather upon the organism itself, putting the cells into a condition which protects them from being influenced by toxine.

*Conclusions:* Up to the present time the treatment of diphtheria alone has undoubtedly been benefited by serotherapy. Despite the satisfaction that serotherapy gives, old therapeutic methods should not be disdained. In a woman affected with puerperal fever, for example, we should not neglect curettage, ultra-uterine lavage, etc.

Finally, not to prejudice the future, serotherapy will not completely overturn the art of healing. Clinicians should fix the indications, and associate other processes with it. Experimenters will perfect and purify the serums; every discovery in this direction and every progress will be a new result acquired for the relief of humanity.

#### ACADEMY OF SCIENCES.

*Upon the Presence in the Superior Laryngeal Nerve of Vaso-Dilator and Secretory Fibers of the Mucous Membrane of the Larynx.*—By exciting the peripheral end of the superior laryngeal nerve in a dog that had been curarized and subjected to artificial respiration, M. Hedon observed that the mucous membrane of the larynx, particularly in the arytenoid region, became vividly red. At the same time drops of mucus exuded from the orifices of the glands, and united in a viscous layer all over the mucous surface corresponding to the side where the excitation was produced, the opposite side remaining dry. From this result the superior laryngeal may be considered as a vaso-dilator and secretory nerve for the mucous membrane of the larynx, as the chorda tympani is for the submaxillary gland.

*Treatment of Experimental Colibacillar Infections by Large Intravenous Injections of Simple Saline Solutions and Their Mode of Action.*—MM. Bosc and Vedel have obtained, by intravenous injections of saline solutions—Na Cl, 7 per 1000—the cure of dogs that had been infected by cultures of colibacillus. These injections act by promoting the elimination of the poison, due to the osmotic action of Na Cl, and its direct and indirect diuretic action, by rehabilitating the altered red globules, by stimulating the movements of nutrition and by diminishing the globulicide power of the pathological serum. They also determine immediate reflex vaso-constriction, which prevents the great and forcible vaso-dilatation produced by the inoculation of the colibacillus.

#### ACADEMY OF MEDICINE.

*Radiographs of a Case of Leprosy.*—M. Berger presented radiographs made by M. Lardy, surgeon, of Constantinople, of the hands of patients affected with anihum, which is a variety of leprosy.

*Cranial Radiography.*—M. Reney exhibited a radiograph that had been obtained after a sitting of seven hours, of a living subject who had received a projectile in the right temple. The situation of the projectile was clearly determined to be upon the optic nerves.

*The Future of Carrier Pigeons, and Country Medical Practice.*—In Scotland there is a physician, Dr. Harrey, who has a very extensive practice, and some of his patients are remote from his residence. It is his custom each day to carry with him several carrier pigeons, and in an urgent case he releases one of them with a prescription attached to it. As soon as the pigeon reaches the doc-

tor's residence his servant looks under the wing, and immediately takes the prescription to the druggist, and dispatches it back to the patient by the same way that it came. Dr. Harrey is also accustomed to leave one or more of the birds with patients whose condition may become suddenly aggravated. In a case of urgency the pigeon is dispatched, and the doctor immediately responds.—*Gaz. Med. de Liege.* J. A. C.

### TRANSLATIONS, GLEANINGS, Etc.

**A New and Distinguishing Sign of Latent Aneurism of the Aorta.**—This sign, according to W. C. Glasgow (*N. Y. Med. Jour.*, Sept. 15, 1894), is the presence of a systolic sound in the brachial artery, synchronous with the cardiac systole, and sometimes accompanied by an arterial murmur. When this sound can be heard, and aortic regurgitation can be excluded, a positive diagnosis of aneurism can be made, even in the absence of all other signs or symptoms. The sound is due to rapid tension of the walls of the only partially filled artery, due to the sudden impact of blood at the heart's systole. In pure aortic regurgitation the sign is always present; in two out of six of the reported cases of aneurism, the diagnosis was made from this sign alone, four months before the appearance of the recognized physical signs. In all six cases the systolic sound in the brachial artery was present; five were intrathoracic aneurisms and one abdominal.

**An Easy and Ready Method of Circumcision.**—John W. Ross, Surgeon U. S. Navy (retired), says in the *Medical Record*, Aug. 31, 1895: Retract the foreskin; insert the glans penis up to the corona into the open mouth of a glass test tube, draw the foreskin well forward over the end of the tube, tie a strong, small silk cord very tightly around the foreskin, immediately in front of the flange of the tube; amputate the foreskin one-eighth of an inch in front of the constricting cord by a circular sweep of the knife, unite the mucous and cutaneous edges of the stump of the prepuce by eight or ten fine interrupted sutures; cut the constricting cord, remove the tube, cover the cut edges well with powdered iodoform; encircle the anterior half of the penis with a roller bandage of iodoform gauze, allowing the meatus to project slightly for facility of urination without soiling or removing the dressing, and keep the patient in bed, with penis elevated, for from twenty-four to forty-eight hours.

**Indications for Surgical Interference in Cases of Appendicitis.**—Steele (*N. Amer. Practitioner*, quoted from *Matthew's Med. Quarterly*, April, 1895) reaches the following conclusions:

A differential diagnosis between appendicitis and typhilitis, perityphilitis, and paratyphilitis cannot be made with absolute certainty, but we remember that 91 per cent. of these cases are appendicitis. From faecal impaction we differentiate by rectal examination, by colonic flushing, and by the administration of salines, aided also by the history and character of the pain present. From tubercular or malignant tumors, by the history. From ovarian or tubal disease, by the history and a careful examination, if necessary, under an anaesthetic. From extra-uterine pregnancy in the same way. From hematocele or intra-abdominal hemorrhage by the history and pallor, shock and varying line of dullness, with absence of temperature, and rapidity and feebleness of pulse.

Steele's ideas in regard to the indications for operation in appendicitis may be summarized as follows:

In cases where there is persistent pain, tenderness, temperature, increasing pulse, increasing tumor, and progression of the disease.

In all cases where pus is present.

In all cases where salines and flushing of the colon do not give prompt relief.

In recurring or relapsing cases in the interval following an attack.

Whenever the appendix is found diseased.

Whenever the appendix is found diseased during a

laparotomy for any other condition, it should be removed at the same time.

Operate immediately in all perforative cases.

Operate in all gangrenous cases.

Operate early, and thus lower the mortality, which is less than 8 per cent. during the first week, and over 17 per cent. during the second week in cases operated upon.

**Antagonism Between Morphine and Cocaine.**—In an article contributed to the *Medical Record*, by Dr. Jos. W. Stickney, the author discusses the question of antagonism between the physiological effects of morphine and cocaine. His attention was called some time since to an apparent antidotal effect of opium in case of cocaine poisoning. The patient had taken 2 ounces of a 4 per cent. solution of cocaine in about two hours. Being unable to sleep and been very nervous after this large dose, he took about half an ounce of laudanum, which in the course of an hour relieved the nervousness and induced sleep. Except for some mental hebetude and a sense of muscular prostration, the patient was in fair condition all the next day—well enough to attend to his business. The author, believing this result could be explained only by the antidotal effect of the laudanum, instituted a number of experiments on animals and a few on man, the details of which are given in his paper; and the results confirmed his supposition as to the antagonism of the two agents. Dr. H. E. Matthews, who had assisted in the laboratory work, was called to a case of opium poisoning, in which he made a trial of cocaine as an antidote. A woman drank over 2 ounces of laudanum and was seen twenty minutes later, being then in a state of great excitement. Six grains of yellow sulphide of mercury were given, which caused vomiting of a clear fluid, which had neither the color nor odor of laudanum, so it was concluded that the poison had all been absorbed. The doctor then administered hypodermically one-half grain of cocaine (presumably one of its salts). The patient became more quiet and vigorous, and subsequently a quarter grain more was given. In an hour her condition was normal. Dr. Stickler concludes his paper as follows: "In any case of opium poisoning I would first employ an emetic; then I would give hypodermically one-fourth to one-half grain of cocaine; wait twenty minutes, and if no decided effect had been obtained I would give another injection of one-fourth grain; after waiting twenty minutes I would repeat the dose if there was no manifest improvement in the case. I think three separate doses of one-quarter grain each, at intervals of twenty minutes, is the best plan to follow, on account of the very quick diffusibility of the drug and its sustained effect. During this time I would administer coffee by mouth or rectum as a supplementary heart stimulant, and in extreme cases employ artificial respiration. While I urge this method, I hope with becoming deference to the opinions of others concerning other plans of treatment, I urge it with the honest conviction that it is an improvement upon the atropine and permanganate of potash methods."

**Tendon Grafting.**—A new operation for deformities following infantile paralysis, with report of a successful case. Dr. Saml. E. Milliken (*Medical Record*, October 26th) reports the case of a boy eleven years of age upon whom, twenty months before, he had successfully grafted part of the extensor tendon of the great toe into the tendon of the tibialis anticus muscle, the latter having been paralyzed since the child was eighteen months old.

The case which was presented showed the advantages of only taking part of the tendon of a healthy muscle, which was made to carry on the function of its paralyzed associate, without in any way interfering with its own work.

The brace, which had been worn since two years of age, was left off, the patient walked without a limp, the talipes valgus was entirely corrected, and the boy had become quite an expert on roller skates.

Dr. Milliken predicts a great field for tendon grafting in these otherwise hopeless cases of infantile paralysis, who heretofore have been doomed to the wearing of braces all their lives.

**Hot Water in the Treatment of Herpes Circinatus.**—Dr. J. Noir, a French physician (*Le Progres Medical*), having a large number of cases of herpes circinatus under his care in idiotic and epileptic patients, had a good opportunity to test the efficiency of various methods of treatment. He found the methods ordinarily employed very unsatisfactory. A patient suffering from the disease was attacked with bronchial pneumonia. He had a temperature of 102° F. for three weeks. One of the attendants contracted the disease in his right hand. On the patient's recovery it was found that the skin disease had disappeared, but the eruption upon the attendant's hand resisted every measure of treatment which was applied, including frequent applications of tincture of iodine and cauterization with nitric acid.

The disappearance of the disease in the patient suggested the application of heat as a means of combating it. The attendant's hand was accordingly treated with hot water at 50° C. (122° F.) After a few daily baths, the eruption disappeared. The same method was applied to two other nurses and forty-seven patients with equally good success.—*Mod. Med.*

**Is There Any "Best" Time for Sleeping?**—Dr. E. P. Colby writes in the *New England Med. Gaz.*: Does the time at which the sleep is obtained, provided it is sufficient in amount, make any change in the result? In brief, is there any truth in the old adage that an hour before midnight is worth two hours after midnight? I had an opportunity to make some study of this subject in my naval service during the late war. On shipboard, as is undoubtedly known to most of you, the ship's company—officers and men alike—stand four hour watches day and night, and to get the required amount of rest are obliged to get their sleep irregularly; to so arrange it that the same man shall not be obliged to take early or late watches continuously, the "dog watch" of two hours is interpolated, thus adding to the irregularity. In watching the results for over two years I could never discover that the watch officers and the men were not as fully refreshed by their sleep as were the medical and pay officers, who stand no watch, and have hours as regular as those of any householder.

**Composition of Expired Air and Its Effects Upon Animal Life.**—The above subject was recently investigated at the Smithsonian Institution, under the provisions of the Hodgkins Fund (*Science*, May 3, 1895). The results obtained in this research indicate that in air expired by healthy mice, sparrows, rabbits, guinea pigs or men there is no peculiar organic matter which is poisonous to the animals mentioned (excluding man), or which tends to produce in these animals any special form of disease. The injurious effects observed of such air appear to be due entirely to the diminution of oxygen or the increase of carbonic acid, or to a combination of these two factors. They also make it very improbable that the minute quantity of organic matter contained in the air expired from human lungs has any deleterious influence upon men who inhale it in crowded rooms, and hence it is probably unnecessary to take this factor into account in providing for the ventilation of such rooms. Taken in connection with the results of other researches summarized in this report, they indicate, moreover, that some of the theories upon which modern systems of ventilation are based are either without foundation or doubtful, and that the problem of securing comfort and health in inhabited rooms requires the consideration of the best methods of preventing or disposing of dusts of various kinds, of properly regulating temperature and moisture, and of preventing the entrance of poisonous gases like carbonic oxide, derived from heating and lighting apparatus, rather than upon simply diluting the air to a certain standard of proportion of carbonic acid present. It would be very unwise to conclude, from the facts given in this report, that the standard of air supply for the ventilation of inhabited rooms, which standards are now generally accepted by sanitarians as the result of the work of Pettenkofer, De Chaumont and others, are much too large under any circumstances, or that the differences in health and vigor

between those who spend the greater part of their lives in the open air of the country hills, and those who live in the city slums do not depend in any way upon the differences between the atmospheres of the two localities, except as regards the number and character of micro-organisms.

The cause of the unpleasant, musty odor which is perceptible to most persons on passing from the outer air into a crowded, unventilated room is unknown. It may in part be due to volatile products of decomposition, contained in expired air of persons having decayed teeth, foul mouths, or certain disorders of the digestive apparatus, and is due, in part, to volatile fatty acids produced from the excretions of the skin, and from clothing soiled with such excretions. It may produce nausea, and other disagreeable sensations, in especially susceptible persons, but most men soon become accustomed to it and cease to notice it, as they will do with regard to the odor of a smoking car or of a soap factory, after they have been for some time in the place. The direct and indirect effects of odors of various kinds upon the comfort and perhaps also upon the health of men, are more considerable than would be indicated by any tests now known for determining the nature and quantity of the matters which give rise to them.

Cases of fainting in crowded rooms usually occur in women, and are connected with defective respiratory action, due to tight lacing or other causes.

Other causes of discomfort in rooms heated by furnaces or by steam are excessive dryness of the air, and the presence of small quantities of carbonic oxide, of illuminating gas, and, possibly, of arsenic, derived from the coal used for heating.

**Some Means Employed in Diagnosis and Cure of Gastric Affections.**—Dr. Dujardin-Beaumetz, in *Lyon Medical*, says (*Med. Brief*). For the diagnosis of gastric affections, no better means is known than the morning test meal, which should always consist of the same food, taken at the same hour—slightly sweetened coffee (or tea) with milk, and one or two slices of bread, the quantity of liquid being always the same and not exceeding five hundred grammes.

If, three or four hours after ingestion, there is a sensation of heat in the stomach, a feeling of exaggerated acidity, we have to deal with a hyperacid dyspepsia.

If, on the other hand, there is an abundance of gas, a sensation of heaviness and fullness, and marked slowness of digestion, subacidity is the cause of the disturbance.

If pain commences after a quarter of an hour, increasing with time, there is probably irritation or inflammation of the duodenum, and in that case, gastro-duodenitis.

Finally, painful cramps and even vomiting may supervene, which in themselves, characterize the disturbance occasioned in the functions of the muscular and nervous centers of the stomach.

These indications are often more useful than the direct methods of analyzing the gastric juice.

In the real painful forms of dyspepsia, such as the gastralgia of chlorotic subjects, the painful crisis appears immediately after the ingestion of food.

Knowledge of the patient's profession and habits is another means of diagnosis.

Among the simple means calculated to cure gastric affections belongs decubitus on the right side during sleep, to promote the passage of food from the stomach to the duodenum.

Warm drinks diminish (according to Linossier) the secretion of the gastric juice, and augment gastric contractility. They are indicated, preferably slightly aromatized, in hyperchlorhydria, and in an indolent and dilated stomach, while very cool water (53 degrees F.) will exert a stimulating influence upon said secretion.

As alkaline waters in small doses, one-half to one hour before meals likewise excite this secretion, they, too, are indicated in hyperchlorhydria. They also promote the muscular movements of the stomach, resulting in a more rapid evacuation. In this case sodium bicarbonate or alkaline water should be taken during or after meals.

Massage is also one of the best means of combating indolence of the stomach and the stasis of food therein.

## MOVING TOWARD THE LIGHT.

The modern developments in physiological chemistry and bacteriology, as well as the accumulated evidence of experience, has convinced the great majority of skilled and well-educated physicians in the ranks of Homœopaths, that the sectarian bounds of their school were too small for the exercise of the practice of rational medicine; and numerous attempts have been made to enlarge the boundaries set by Hahnemann, the founder of this school of medicine.

This movement has finally gained such proportions that there was recently organized at Buffalo a medical society known as the American Association of Physicians and Surgeons, made up of qualified members of the profession of different schools, the purpose of which is to break down the bars of sectarian medicine and make a platform large enough to admit any intelligent or qualified practitioner, irrespective of his sectarian antecedents. So far as its medical creed is concerned, the regular profession has long ago abandoned sectarianism, and ceased to subscribe to the principle of *contraria contrariis curantur* attributed to it by Hahnemann.

We are glad to see this movement. It is in the right direction, and it is the sincere hope of the writer that some time in the future there may be only two recognized classes of physicians, *vis.*, those who are practicing medicine on a rational and physiological basis, and those who are pursuing blindly irrational methods.

The long fight among the different schools of medicine has been based upon differences of opinion upon the so-called action of drugs, but intelligent physicians are finding out (many long ago made the discovery) that in the relation of the human body and drugs, it is the cells of the body which are active, and not the drugs. The body acts upon the medicine, not the medicine upon the body. Modern developments in hydrotherapy, electrotherapy, massotherapy and the various branches of physiological medicine, including dietetics, have left comparatively little room for pharmaceutical products, so it is exceedingly foolish to still maintain the old quarrel about big doses and little doses, when doses of any sort have so small a part to play in the rational treatment of diseases. The high potency delusion seems about dead.—*Modern Medicine.*

## IS INHERITED SYPHILIS CONTAGIOUS?

Dr. Robert W. Parker, after twenty years' experience at the East London Children's Hospital, has arrived at the following conclusions: 1. The children of syphilitic parents very frequently show manifestations of a disease which is almost universally called "inherited syphilis." 2. In a large proportion of cases this inherited disease is not syphilis at all, in that the disease is non-contagious, and would be better named "inherited from syphilis." 3. This inherited disease is true syphilis only if it conform to the ordinary tests which pertain to contact syphilis and prove to be infectious and contagious. 4. The children of syphilitic parents occasionally inherit syphilis. 5. The mother suckling a child with such a disease may be infected by it. 6. A healthy wet nurse and other persons brought into contact with such a child are even more liable to be infected by it than the mother. 7. Lymph taken from such a child, even although apparently well at the time, will probably, or possibly, invaccinate syphilis. 8. In reply to the question, Can a healthy woman give birth to a syphilitic child? the answer must be no. 9. Many women give birth to children who suffer from what is called "inherited syphilis," without themselves appearing to be infected. The explanation is obvious. This "inherited syphilis" is not syphilis in the true sense, and the mother's so-called escape depends on this fact. 10. There is no recent clinical evidence which fully realizes Colles' teachings, *viz.*, a mother suckling her own syphilitic infant and escaping an infection to which a healthy wet nurse suckling the same infant, and other members of her family, who have merely handled this infant, have succumbed, the latter facts being

essential, if only to establish the contagiousness of the infant's disease in any and every given case asserted to be "inherited syphilis."—*Edinburgh Medical Journal.*

## MASTURBATION AND SPERMATORRHEA.

I do not believe it safe for a physician to prescribe fornication. It is not safe nor curative, apart from the moral aspect of the matter. It has always struck me also as pretty small business, for a man to purposely select a wife to relieve him of the results of a weak will and vicious sensual indulgence. If marriage comes in the natural course of events, as it often does, so much the better. But to select a wife as a remedial agent for masturbation is unjust to the woman and a confession of moral and mental feebleness. Man is distinguished from the brute by his self-control. Let him bear the fact in mind and raise himself by a determined effort of the will. Pure thoughts and chaste associations, vigorous physical exercise, and a resolute effort to act a manly part will always be successful.—DR. CHARLES L. DANA, *Text-Book of Nervous Diseases*, p. 460.

Dr. George B. Fowler, Commissioner of Health, is doing some practical work in simplifying the certificate of death required by the Health Department, in the following proposed rules:

- A. 1. The attending physician must furnish a certificate within thirty-six hours after death (Sanitary Code, Sec. 151).
2. All physicians practicing in New York City (including those in public institutions) must be registered in the Bureau of Records (Sanitary Code, Sec. 5).
3. If a person dies from *criminal violence*, or by a *casualty*, or *suddenly while in apparent health*, or *when unattended by a physician*, or in prison, or in any *suspicious or unusual manner*, the case must be referred to the Coroner's office (Chap. 410, Sec. 1773, Laws of 1882).
4. Certificates will be returned for additional information which give any of the following diseases, without explanation, as the sole cause of death: *Abortion, child birth, gangrene, meningitis, necrosis, pyæmia, abscess, convulsions, gastritis, metritis, peritonitis, septicæmia, cellulitis, erysipelas, hemorrhage, miscarriage, phlebitis, tetanus.* (Any one of these may be the result of an injury and thus be a subject for investigation by a coroner. If it is not the certificate should make that fact plain.)
5. No certificate giving "heart failure," "dropsy," or other *mere symptom*, as the sole cause of death will be accepted unless accompanied by a satisfactory written explanation.
- B. 1. No burial permit can be obtained without a proper certificate.
2. Certificates must be written throughout in black ink.
3. No certificate will be accepted which is *mutilated, illegible, inaccurate*, or any portion of which has been *erased, interlined, corrected or altered*, as all such changes impair its value as a public record.

The *Medical Century* of October 1st states that Dr. Fisher has been compelled to "retire temporarily" from the editorial chair on account of serious illness. Dr. William A. Smith, the new editor, states that "the editorial columns of the *Medical Century* having been consigned to my absolute control during Dr. Fisher's illness, they will voice my individual sentiments during that period."

The Berlin correspondent of the *Medical Press and Circular*, in his notes of the recent Jenner centennial celebration in Germany, records that Prof. Virchow, who opened the proceedings in the name of the committee of honor, said, in his address, that as an ethnologist he was compelled to mention an ethnologic fact in the history of protective vaccination: All the peoples that had not been reached by vaccination, or that had not accepted it, had disappeared from the face of the earth, destroyed by the smallpox.

## MISCELLANY.

—Injections of warm water administered every morning for two or three days are said to be a positive cure for pin worms.

—It is proposed to endow a bed at Guy's Hospital to bear the name of the poet Keats, who was for a short time a medical student there.

—Our journals are crowded with essays on gynecology, relating mostly to treatment. We suggest that writers give special attention to prevention.

—The University of Paris will hereafter require of foreigners the possession of a literary degree as a prerequisite to graduation from its medical department.

—To practice medicine in the Republic of Hawaii a license must be obtained from the Minister of the Interior, after having first passed the Board of Medical Examiners.

—Kellas concludes from his experiments that exhaled air contains more argon than before inhalation. From this he infers that it is an important element in the animal economy.

—Reckoning from the cessation of the last menses and the first feeling of life, Dr. Szaszv mentions a case in which gestation lasted 330 days. The child was normally developed.

—The Medical Society of Berne has inaugurated a plan for the suppression of press notices of suicides, as it has been observed that epidemics of suicide, so-called, come from suggestion, acquired through printed accounts of them.

—*Cleaning Rusty Instruments.*—Fill a vessel with a saturated solution of chloride of tin in distilled water. Immerse the rusty instruments and let them remain all night. Rub dry with chamois after rinsing with running water and they will be of a bright silvery whiteness.

—The military officers at Rennes (*Med. Press and Circular*) have recently suffered from a typhoid epidemic, which has been traced to the ice which was used to cool the champagne at a banquet. The ice had been taken from a neighboring river at a point where the town sewer emptied.

—It is said that the chance of the patterns on the finger tips of two persons being alike is less than one in 64,000,000,000. The print of the thumb of the manufacturer is suggested as a good trade mark to be imprinted on each bottle of soothing syrup or corn salve, to insure its genuineness.

—The Convalescent Dinner Society is a London Association which undertakes the duty of granting in well-authenticated cases, in which sickness has reduced the strength necessary to return to work, an order for fourteen daily dinners. Such orders have been granted to nearly 1,000 convalescents during the past year.

—The *Deutsche Med. Woch.*, August 13th, brought actual photographs of the heads of a couple of Eulenberg's patients, in which the Röntgen ray discloses and locates a bullet inside the skull. The photograph was taken with the head of the patient resting on the plate holder, with the Crookes tube about 24c. above.

—The members of the Hempstead Medical Association, of Portsmouth, O., have decided to prepare a black list of all persons who refuse or deliberately neglect to pay physicians' bills. The arrangement was to go into effect October 1st, and medical treatment is to be refused to all persons whose names are on the list, unless paid for in advance.

—Wealth does not seem to figure very largely as a factor of longevity or as a preventive to suicide, as the Irish and Spanish centenarians—between whom there exist strong racial relationships—belong to nations who are about the poorest off in the whole of Europe, and yet furnish the smallest average rate of suicides and the greatest number of centenarians.

## THE NEW PHONENDOSCOPE.

The newly invented phonendoscope is designed to be used by physicians and surgeons for detecting the presence of disease by sound.

The instrument consists of a circular flat metal box or tympanum, having on its one surface two apertures for the attachment of the rubber ear tubes, while the other surface is formed by a thin disk which is readily thrown into vibration. The best results are obtained by simply applying this disk to the surface to be examined. By an ingenious contrivance a second disk can be superposed upon this one, and a vulcanite rod attached to the former, so that the area of auscultation may be extremely circumscribed. The condition of the sounds is only slightly diminished by the use of the rod, which thus combines the principle of the solid stethoscope with that of the tympanum. The rod furnished with the instrument is about 2 inches in length, but it is stated that there are other rods of various lengths, to enable the "phonendoscopist" to receive sound vibrations from the natural cavities which communicate with the exterior of the body. Altogether, we consider the instrument highly ingenious, carefully and compactly constructed, useful as an aid to auscultation, and yet not likely to entirely supersede the use of the stethoscope. It may also be found useful in class demonstration, since it would be easy by means of branched tubes to enable several persons to listen at the same time.

The instrument would be particularly useful for the following purposes: (1) The sound of the respiratory organs, of the circulation of the blood and of the digestive organs in the healthy body, as well as in the sick subjects. (2) The sounds made by the muscles, joints and bones. (3) The sounds of the capillary circulation. (4) The slightest sounds produced in any diseased condition of the body; hence it is possible to draw on the body dimensions, the position or any alteration in the position of the various organs and of the fluids which have gathered in the most important cavities in the body. (5) The sounds in the eye, the ear, the bladder, the stomach and the intestines.—*Lancet.*

Prof. Augustin H. Goelet, of the New York School of Clinical Medicine (*Med. Record*) employs a knife of peculiar construction for denuding the lips of the cervix in the operation of trachelorrhaphy. He claims that the operation can be completed in one-half the time that is usually consumed when scissors are used for denuding, and that the surfaces to be approximated are more regular and even. With the knife each lip is denuded with one stroke, and no trimming is required afterwards to remove superfluous tissue. The knife, which is double-edged, pointed blade set at nearly right angle to a firm shaft and handle, is made to transfix the cervix beyond the plug of cicatricial tissue, and cuts as it is drawn downwards, making a clean denudation. For inserting the suture he employs a round, full, quarter-curved needle with a flat, spear-shaped point, which penetrates the dense cervical tissue with ease and never breaks. For suture material he uses silver wire or silkworm gut only, believing that catgut or any other suture which is not absolutely impervious should not be used in the cervix. The chief advantage of silver wire and silkworm gut is that the sutures may be left in the cervix for any length of time until complete union has taken place. Catgut absorbs or loosens too soon, and is liable to absorb septic matter from the vagina and convey it along the suture track. Fine chromatinized catgut may be used for superficial auxiliary sutures.

## OBITUARY.

SIR JOHN ERIC ERICHSON, the distinguished English surgeon, whose work on surgery was for many years a textbook in our leading schools, died in Folkestone in September, of apoplexy, at the age of seventy-eight years.